...ation, Pg. 3

Infant RDS Tied to Thyroid Deficiency, Pg. 3

Retroprogesterones Used as Contraceptive

Medical Tribune World Service

UMEA, SWEDEN—Promising results from the contraceptive use of retroprogesterones were reported here by Dr. Erik Odeblad, of the Institution for Medical Physics at the University of Umea.

Retroprogesternes, in contrast to regular contraceptive pills, act on the uterine cervical mucose, preventing the passage of sperm, and do not interfere with the body's total hormonal balance, he told MEDICAL TRIBUNE.

Voicing concern about the widespread use of the contraceptive pill, Dr. Odeblad said that too little is known about its side effects and he added that vigorous efforts should be made to find a contraceptive substance that does not act directly on the pituitary.

He called attention to the number of women (15 per cent of 300 in his own institution) who become anovulatory for prolonged periods once they stop taking the pill.

Also Called Mirror Hormones

Popularly called mirror hormones in Sweden, retroprogesterones are steroids in which methyl groups have a different configuration, usually a mirror image of the common form.

Dr. Odeblad has used three retroprogesterones, RO 6-3129 and RO 6-0175, from Roche, and Duphaston, from Philips. Best results have been obtained with the first of these, he reported.

When given to 28 women, retroprogesterones eliminated invasion, motility, and penetration of sperm in all but one woman during the effective time of the pill, he said. The optimal dose was found to be 16 mg., and the effect lasted from four to 14 hours, according to Dr. Odeblad.

The short action time presents both an advantage and a disadvantage, Dr. Odeblad observed. While the effect does not become systemic, frequent doses are required. Another disadvantage is the individual cost of the retrogesterones, he said.

Dr. Odeblad believes that the retroprogesterone pill, if given continually, would have the same effect on the pituitary as the common contraceptive pill. He does not think it should be administered in this manner.

Retroprogesterones cause few, if any, visible effects other than some nausea, he said. Careful search for precancerous changes on the epithelial lining of the uterus and cervix have not revealed any indication of the beginnings of any cancerous lesions, he reported.

Before treating patients with retroprogesterones, Dr. Odeblad primes them with estrogen to arrive at a constant menstrual state. Then, when the retroprogesterone is given, a complete blocking of sperm passage is observed within three to four hours and lasts up to 14 hours.

Medicredit Cards for Health Care Are Planned for Patients in Toronto

Medical Tribune World Service

TORONTO—Health authorities here are planning to issue Medicare "credit cards" that will provide computerized instant retrieval of a patient's total medical record, including history, office visits, treatment, and diagnostic and surgical procedures. Such Medicredit cards are already in use in Quebec, Canada's second largest province.

"The idea looks pretty good," Dr. Richard T. Potter, Ontario Health Minister, told the Ontario Medical Association here. "It would result in easy preparation of patient profiles. It would be a means of informing the patient of the cost of health services. That can be done now but certainly with less sophistication than would be required if this is to become a tool for controlling abuse."

If the system is approved, a patient will present his "credit card" when he applies for medical and hospital services.

Dr. Potter acknowledged in an interview, however, that the system could mean loss of patient privacy. "Whenever government enters the picture, you lose a little bit of your freedom," he said.

The provincial government of Ontario runs a comprehensive prepaid medicare scheme that last year cost $540,000,000. $50,000,000 more than estimated. Of that, $515,000,000 went to doctors and the rest to other health workers.

TB Patient Stabs Self To Get Into Clinic

Medical Tribune World Service

KARACHI, PAKISTAN—A 40-year-old tuberculosis patient went into a police station, stabbed himself with a knife and was admitted to the Civil Hospital here. He explained that he wanted to cut the red tape required for admission to the Karachi TB Sanatorium, reasoning that he could gain the doctor's sympathy and be admitted immediately. He faces a charge of attempted suicide.

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and Medical News

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A.M.A. Chief Retires

Hoffman Fears Loss in Quality Of Health Care

Medical Tribune Report

NEW YORK—The retiring president of the American Medical Association warned his colleagues that "we will never have enough physicians to meet the demand . . . because it is based upon unreasonable expectations."

Dr. C. A. Hoffman urged the organization to "educate the American people to that fact" rather than participate in the speedup of medical education that is "in response to the hue and cry over the so-called physician shortage."


DR. HOFFMAN

The Huntington, W.Va., urologist told the A.M.A. annual convention that his year in the presidency has bolstered his opinion that the main threat of current health care developments is to the quality of medical service.

Those developments, he acknowledged, include the A.M.A.'s backing of experiments to shorten medical education. But the experiments ignore the facts that medical students have to absorb more knowledge, that the manpower need is "not narrowly trained superspecialists but human physicians who understand and relate to people," that a physician's "most important single quality" is maturity of judgment, and that "whole physicians" need the rotating internships largely abolished with A.M.A. approval.

The "threat to undermine the quality of

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Playwright Was Helped by Drug


A manic-depressive for 20 years, Joshua Logan (l), shown working with William Shatner and France Nuyen on his 1958 production of "The World of Suzie Wong," testifies to the effectiveness of lithium in the treatment of the disease.

Lithium Held Drug of Choice In Manic-Depressive Illness

Medical Tribune Report

NEW YORK—Lithium is the drug of choice in the treatment and prevention of most manic-depressive disorders, Dr. Ronald R. Fieve, chief of psychiatric research at the New York State Psychiatric Institute, told the American Medical Association here.

On the basis of his own and other studies, he said, more than 80 per cent of manic-depressive patients, most of them with histories of psychotherapy, electroshock, and polypharmacotherapy, show "remarkable improvement" on lithium carbonate. These patients, he told an A.M.A. symposium on depression, can be followed monthly for monitoring of lithium blood levels as well as evaluation of their physical and emotional state.

In a highlight of his report, Dr. Fieve introduced the internationally known playwright-producer Joshua Logan, who gave a firsthand account of his experience as a manic-depressive.

Manic persons, the psychiatrist stressed, are often highly successful, energetic, and creative people, and only occasionally

Continued on page 30

Incidence of Herpes VD in Dramatic Rise; Expert Cites Risk of Neonatal Infections

Medical Tribune Report

NEW ORLEANS—The incidence of venereal herpes virus infection has increased "dramatically" in the past five or 10 years, the third International Venereal Disease Symposium was told here.

Although the disease, caused by type 2 herpes virus, is not as serious as syphilis or gonorrhea, Dr. Marvin S. Amstey, of the University of Rochester, warned that it is of "major importance because it is the cause of infection of the newborn, and this infection is frequently fatal."

"In addition, it has the same epidemic disease pattern as cervical cancer," the physician stressed. "In fact, some investigators have been attempting to establish a causal relationship between the virus and this cancer. It is thus, for many reasons, highly important to recognize the disease in pregnancy and prevent infection of the newborn, and it is necessary to identify those women who are at high risk as having abnormal Papanicolaou test results."

Observing that the clinical evidence for herpes VD is becoming increasingly familiar, Dr. Amstey, who is Assistant Professor of Obstetrics and Gynecology, said: "Ten years ago practically no mention was made of the infection. More important, it wasn't even considered a venereal disease until the late 1960s."

Continued on page 30

Women's Needs Put Doctors 'at Crossroads'

Medical Tribune Report

BAL HARBOUR, FLA.—A women gynecologist called on both male and female colleagues here to realize that 10 years of "women's liberation" movements have produced a generation of women who are not only expecting but also demanding new attitudes on the part of their physicians.

"We are at an important crossroads—that of either changing to meet women's needs or condoning their own self-care," Dr. Valerie Jorgensen told the annual clinical meeting of the American College of Obstetricians and Gynecologists.

Dr. Jorgensen, an Assistant Professor in the Department of Obstetrics and Gynecology, University of Pennsylvania School of Medicine, noted that women today are being challenged by peer groups, books, and the news media to take an active role in their medical care, sexual lives, and selection of goals.

Sexual liberation has brought a marked alteration in what women expect of their gynecologists, she emphasized. And the changed expectations place "a tremendous burden on the physician, who must shift from his former medical omnipotence to becoming a partner in the relationship of health care."

Patients now insist, Dr. Jorgensen said, on being informed and educated about body functions. They demand to be treated with respect, to participate in their own care, and to share in reaching health decisions that affect them.

These, in her view, are reasonable demands "that lead to better medical care," and she warned that if they are not met patients will begin to treat themselves and each other for some genitally related problems.

Discussing the difficulties this generation is experiencing in adjusting to a new sexual awareness, Dr. Jorgensen commented that women are in conflict over expectations that are often unreal for their individual situations and over the problems inherent in sex without love or love without sex.

Gynecologists thus have a responsibility to discuss sexual practices and performance in an objective, nonmoralizing fashion with each patient, she declared, adding that physicians have neither the right nor

Continued on page 30

Heart Group Begins Plan To Root Out High BP

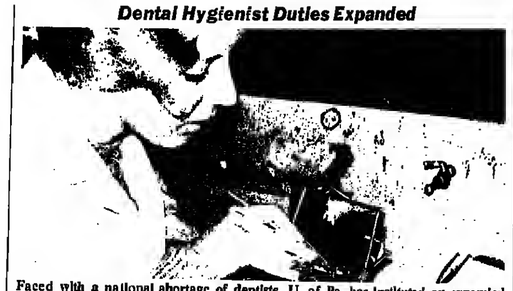
Medical Tribune Report

NEW YORK—The American Heart Association has developed an all-media nationwide campaign in an expanded educational effort to find an estimated 11,500,000 Americans suspected of having undiagnosed high blood pressure and to get them under effective treatment.

Campaign kits sent to more than 200 affiliates in the 50 states contain, among other material, radio messages and TV films. These range from 30-second spots to three-minute featurettes starring such performers as Stiller and Meara, Peggy Cass, Maureen Stapleton, Martin Balsam, Dayton Allen, and Al Freeman, Jr.

Reversal of Vasectomy Provides Only 1-in-5 Chance of Fathering a Child, According to Urologist's Study, Pg. 25

Dental Hygienist Duties Expanded



Faced with a national shortage of dentists, U. of Pa. has instituted an expanded dental hygiene program in which students learn to perform duties formerly reserved for dentists. Above, student Patti Finneran practices placing a restoration.

Biochemical Abnormalities Are Found In Huntington Chorea Victims' Brains

Medical Tribune World Service

VANCOUVER, B.C.—Investigators at the University of British Columbia have found biochemical abnormalities in areas of brain of patients who died of Huntington's chorea.

Amounts of gamma-aminobutyric acid, thought to be an inhibitory neurotransmitter, were significantly lower than normal, according to Prof. Thomas L. Perry, of the Department of Pharmacology, and Shirley Hansen, a research associate.

The finding was made in measurements of about three dozen amino acids and related compounds in 12 areas of the brain in eight Huntington's chorea cases, one parkinsonian case, and eight other cases of neurologic or mental diseases.

The investigators suggested that Huntington's chorea may be a good model for studying the biochemical basis of mental illness.

New WHO Director Prays For Help in Oath Taking

Medical Tribune World Service

GENEVA, SWITZERLAND—Prayer by WHO's new director-general, Dr. Halfdan Mahler, on taking the oath of office at the World Health Assembly:

"Help me to find the courage to change things I can, the serenity to accept the things I cannot change, and the wisdom to know the difference."

Esophageal Cancer Screening Achieved by Cytologic Exams

Medical Tribune World Service

BOLOGNA, ITALY—Cytologic examination has proved to be an effective mass-screening technique for the early detection of carcinoma of the esophagus, according to Dr. K. C. Huang, head of the Department of Surgery, Tumor Institute, Chinese Academy of Medical Sciences, Peking.

He told the second international Symposium on Cancer Detection and Prevention here that several such screenings have been conducted in North China, where carcinoma of the esophagus is one of the most frequent malignancies encountered.

Suitable for Mass Survey

"The test is simple, accurate, easily accepted by the patients, and suitable for mass survey and daily OPD work," he said. "At present, it is widely utilized both in rural and urban areas."

Dr. Huang said that mass screening was undertaken after statistics revealed that the disease was already in an advanced stage in most patients seen in the city hospitals.

"Of the patients undergoing surgical intervention, more than half had lymph node metastases and the results were unsatisfactory," he said.

The apparatus used for collecting the cytologic specimens is a double-lumen rubber tube, measuring about 60 cm. in length, with an abrasive balloon at the distal end. At the proximal end the double lumen separates into two tubes, one for air injection and the other for suction.

"The person to be examined," Dr. Huang explained, "is instructed to ... in the morning with an empty stomach ... is asked to swallow the tube until ... balloon has passed the cardia. Then ... ml. of air is injected into the balloon ... the tube with the distended balloon is ... drawn gradually. After the balloon ... come into the esophagus, the air is ... tially withdrawn and the traction of ... tube continues until it is entirely out."

Dr. Huang said that smears of ... exfoliated cells collected on the ... of the balloon are made, stained by ... nicolaou's method, and examined ... scopically.

The mass survey consisted of ... groups. In the first, 7,686 cases with ... pected esophageal carcinoma were ... amined in the years 1963-68. ... noma of the esophagus or gastric ... was found in 510 cases, and of these ... early carcinoma was found in 86 (16.9 per cent).

In the second group, a mass survey ... conducted in 1971-72 in 11,564 ... over 30 years of age. Carcinoma of ... esophagus or gastric cardia was found ... 136 cases, and of these, early cancer ... was found in 96 (71 per cent).

Dr. Huang said that these figures ... compared with findings in 8,528 cases ... patients who came to the county hospital ... for upper gastrointestinal disease. Among ... them, 3,122 patients were found to have ... carcinoma of the esophagus or gastric ... cardia, and of these, 212 were in the ... stage (7 per cent).

Detected Early Cases

Dr. Huang noted that the mass survey ... was effective in detecting early cases and ... was of greater significance than the ... (40.

Roentgenologic examination was carried out in cases with positive cytologic findings, with marked hyperplasia, or with symptoms of carcinoma but negative cytologic findings. Results were evaluated by a joint group of cytologists, roentgenologists, and surgeons, and examinations were repeated whenever a discrepancy appeared.

"The rate of correct diagnosis increased gradually from 87.8 per cent in 1963 to 91.9 per cent in 1969," Dr. Huang said.

"The cure rate has been very much increased for the early cases," he said.

Among 52 cases that underwent resection more than a year ago, there were no operative deaths—one death a year after operation with recurrence, one four years later of carcinoma of the cervix—and no deaths four years later from diseases related to esophageal carcinoma. Of the 52 patients still living, 21 have already reached five-year survival.

"It is worth-while to point out that during operation for all these cases no ... mass or obvious abnormality could be palpated on exploration of the esophagus, ... the extent of resection was determined by cytologic, roentgenologic, or endoscopic examinations," Dr. Huang said.

Isolation Used to Break Anorexic Pattern

Medical Tribune World Service

GENEVA, SWITZERLAND—Isolation treatment is effective in breaking the pattern of the symptoms in almost all cases of anorexia nervosa, according to Dr. Alain Guan-Sechehaye, consultant psychiatrist at Geneva Cantonal Hospital.

But success requires the coordinated effort of the entire medical team, he warned, and it is not easy to give severe, almost harsh, treatment to a young woman who is dangerously near death by starvation, self-imposed though her condition may be.

"By the time she arrives in hospital," he said, "the patient usually looks like a starved little bird, and the nurses want to pamper and mother her, to beg her to eat. It goes against all their motherly instincts and their training to stand off and refuse to fall into the dependence-feeding relationship the patient has usually had with her mother," Dr. Gunn-Sechehaye said.

His first step in the treatment of this ailment, which usually occurs in young girls in whom it is considered a refusal to accept womanhood, is to make the medical team realize that a solicitous attitude will only reinforce the symptoms and increase the danger to the patient.

"This includes the doctor, whose father feelings make it difficult for him also," Dr. Gunn-Sechehaye continued. "Anorexic patients sometimes lose up to 5 per cent of their normal weight in a few months, and it is very moving to see a very serious case of a young girl arriving at the hospital weighing about 30 kilos or so."

The anorexic patient who arrives at Geneva Cantonal Hospital in a dangerous state is installed in a locked private room. No flowers, no visitors, no communications with family or friends are allowed. The patient is isolated completely from her normal outside environment. The nurses and doctor maintain a reserved attitude.

Explains What—Often Why

Dr. Guan-Sechehaye explains to the patient what he is doing and generally why.

The patient seeks to re-create in the hospital situation the same battle over food that she had at every meal at the family dining table, Dr. Gunn-Sechehaye said. When she meets insurmountable obstacles to her behavior in restricting her eating and realizes that the team caring for her is absolutely determined, she first agonizes and becomes irritable.

"We must remember that to eat causes the patient real distress," Dr. Gunn-Sechehaye observed. "That will mean she will take shape, she will become feminine, she will have sexual feelings, contacts with young men. As long as she stays a baby, she is pleasant and sweet and unafraid. But when you begin the harsh treatment, she becomes nervous and aggressive and accuses us of being cruel to her."

There are those who disagree with his approach, he said, "but it works. It provokes a more authentic relationship and permits us to direct and use that relationship for effective treatment."

In only one case did Dr. Gunn-Sechehaye find isolation treatment insufficient to break the pattern of starvation, and in this case he added electrotherapy to reinforce it and was successful, he reported.

Most anorexic patients, he said, fall into two categories: those who are able to achieve a real consciousness of their problem and are willing to undergo psychoanalytic treatment for months or even years, and those whose consciousness of their illness is poor or nonexistent.

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CLINICAL NEWS NOTE: *"Cromolyn sodium has been found most efficacious in many severely affected asthmatic patients only partially controlled by modern allergy therapeutic methods. . . ." (Dr. Mayer B. Marks; see page 28.)*

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Vitamin C Need Believed 20 Times That for 'RDA'

Medical Tribune Report

AUSTIN, TEX.—The results of a study of 50 young guinea pigs—an animal that, like man, lacks the ability to synthesize vitamin C—suggest that the need for the vitamin in young human beings for good health and development "is probably at least 20 times higher than the accepted recommended daily allowance," according to Man-Li S. Yew, Ph.D., of Clayton Foundation Biochemical Institute, University of Texas at Austin.

This is one of the first experiments to deal with Dr. Linus Pauling's claim that the human need for vitamin C has been underestimated by a factor of 10 or more by the Food and Nutrition Board of the U.S. National Research Council.

Dr. Yew told MEDICAL TRIBUNE that the Food and Drug Administration has not queried her regarding the substantial challenge to the FDA's vitamin C position that her research provides.

Dr. Yew said that, in light of her research, the entire spectrum of human vitamin, mineral, and amino acid requirements needs review—a challenge to accepted medical doctrine.

"Due, however, to decades of neglect on the part of medical scientists, much practical information about human needs for various nutrients is shrouded in confusion and uncertainty," the investigator charged.

Identified 41 Years Ago

In presenting her findings, Dr. Yew said that "41 years have now elapsed since vitamin C, ascorbic acid, was identified, and it seems that by now medical science should have definite information about the crucial problem of how much of this vitamin human beings—including particularly children—need to promote good health and development. This information would be available by now if consistent scientific effort had been expended to obtain it."

In Dr. Yew's study, 50 young male guinea pigs, fed a commercial chow formulated for their breed, were tested when they reached an average weight of 350 Gm. After being divided into five groups, one of which continued to eat the chow, four groups were put on an ascorbate-free diet that was supplemented with vitamin C at four different levels of intake—0.05, 0.5, 5, and 50 mg./100 Gm. of body weight per day. This represents a 1,000-fold range in ascorbic acid intake.

Several Indices Were Used

Several indices were used to measure the influence of vitamin C in maintaining good health: average weight gain per day before stress (surgery), average weight gain after stress, recovery from anesthesia, wound healing and release of scabs, and amino acid analysis of regenerated skin samples.

Dr. Yew found that the guinea pigs receiving the highest level of vitamin C did much better on all indices, with the 5 mg. dosage proving almost as helpful as the 50 mg. intake—which may have been too much for some of the animals.

Individual guinea pig requirements for the vitamin were found to vary greatly throughout the study. One animal at the lowest intake level exhibited a good growth rate of 6.3 Gm./day, while another animal in the same group lost 4.2 Gm./day. But the variation was greater at lower intake levels than at peak consumption. Dr. Yew concludes that since high levels of vitamin C supply the entire guinea pig population adequately, this accounts for the fewer variations at the peak consumption level.

The 5 mg./100 Gm. of body weight per

Continued on page 8

Parents Help Care for Hospitalized Children

MANY HOSPITALS are today experimenting with allowing parents to be with their hospitalized children. The Care With Parent Program at Mount Zion Hospital in San Francisco allows the parents of a hospitalized child to share his room and take over some of the duties of caring for the child under staff supervision. The parents also learn the nursing techniques that will be necessary during a prolonged convalescence or chronic illness as well as giving the child emotional support and comfort.

Above, a woman whose daughter is a patient makes up the chair-bed she sleeps on in her daughter's room. Right, she learns how to take the girl's blood pressure under instruction from nurse-coordinator Lynn Noonan. Below, the mother fixes her daughter's hair. The personal attention given by the parents has done much to cheer the children.

40,500 Tested for High BP In San Diego; 30% Referred

Medical Tribune Report

SAN DIEGO, CALIF.—In what was described as the largest program of its kind ever conducted, more than 40,500 persons from the age of five up were screened here for high blood pressure during Operation Heart Alert last month. Nearly 30 per cent were referred to their physicians because of elevated readings.

The program was conducted at 13 CHEC (Community Hypertension Evaluation Clinic) stations by 1,200 medical, paramedical, and lay volunteers. It was sponsored as a community service project by the San Diego County Heart Association, the San Diego County Medical Society, and CIBA Pharmaceutical Company.

Raymond Burr and his "Ironside" team of Doa Galloway and Elizabeth Baur were the active cochairmen of Operation Heart Alert, under the general Chairmanship of Dr. Gerald Person.

100,000 Have Been Screened

To date, more than 100,000 persons across the country have been screened for high blood pressure by CHEC programs and 29 per cent have been referred to their physicians.

The referral rate of nearly 30 per cent in the San Diego area "was higher than anticipated," according to Dr. William T. Adams, president of the San Diego County Medical Society, who said he had expected a rate of 25 per cent.

Dr. James Lasry, president-elect of the San Diego County Heart Association, commented:

"We were most gratified by the program. The number of persons screened in this two-day program was 10,000 more than in previous programs, and the follow-up study and spinoff in education, public awareness, and general information will prove most valuable."

ECTOPIC BEAT

"Dr. Ewing said that according to his study, 'as marijuana use goes up, so does alienation.'"

—release from University of North Carolina Division of Health Affairs.

And down goes spelling.

(Regular beat: Immateria Medica, page 31.)

Infant Respiratory Distress Linked to Deficient Thyroid

Medical Tribune Report

SAN FRANCISCO—Infants born with respiratory distress syndroma (RDS) have lower thyroid hormone activity than premature or full-term control babies, according to a study reported here by Dr. Ralph A. Reckling, Assistant Professor of Medical Sciences at Brown University.

He noted that when lung surfactant is not present in sufficient quantity at the air-fluid interface within lung alveoli, collapse of air sacs and a striking increase in work of breathing occur and that these two pathophysiologic features are characteristic of RDS of the newborn.

Working with adult rats, he and his colleagues demonstrated that thyroid hormones, both L-thyroxine and tri-iodothyronine, are potent stimulators of lung surfactant production and stimulate production of lamellar inclusion bodies within type 2 pneumonocytes.

"Because of these animal studies, we felt that an assessment of thyroid function in human newborns was needed to evaluate its relationship to the presence of RDS and lung surfactant deficiency," he told the annual meeting of the American Pediatric Society and the Society for Pediatric Research.

The study measured the total serum thyroxine (T_4) and tri-iodothyronine resin uptake in 40 premature infants with RDS, in 39 premature without RDS, in 22 full-term babies, and in their respective mothers.

T_4 Level Low in RDS Group

The mean T_4 level from cord blood at birth was significantly lower in the RDS premature than in the other two groups of babies, he reported. Two days following delivery, the mean venous drawn blood serum T_4 did not rise as high in the group with RDS as in the prematures without RDS, and the difference was significant. When matched by gestational age, those babies with RDS were always significantly lower than prematures who did not encounter pulmonary difficulty.

A number of investigators, he noted, have shown that thyroid maturation in the growing fetus is largely independent of the maternal thyroid status—the placenta acts as a barrier and is impermeable to the transfer of L-thyroxine, tri-iodothyronine, or thyroid-stimulating hormone.

"This study," he commented, "would tend to confirm this information since motborn of prematures with or without RDS had similar total T_4 levels and free thyroxine indexes, while the two groups of premature babies themselves were significantly different."

It is well established, he remarked, that the appearance of type 2 pneumonocytes, osmiophilic lamellar inclusion bodies, and lung surfactant lecithin in the developing fetus occurs within the last 15 to 40 per cent of normal gestation.

Dr. Redding concluded: "Since L-thyroxine has been shown to be a potent regulator of lung surfactant production, believed to be deficient in RDS of the newborn, an association between lung immaturity and fetal thyroid function is postulated."

Coauthors of the report were Drs. Colina Pereira and John T. Barrett.

What's new and important in pulmonary medicine?

The Consultant

DR. SPENCER K. KOERNER
Chief, Division of Pulmonary Medicine, Montefiore Hospital and Medical Center, New York.

"...a tremendous improvement in survival....Mortality rate has been reduced to 10 per cent or less..."

THE LAST FIVE YEARS have seen the development of respirstory intensive care units in many hospitals throughout the country. These units, capable of providing superspecialized care to patients with acute respiratory insufficiency, have resulted in a marked improvement in prognosis for these extremely sick patients. There is no uniform agreement as to the definition of respirstory insufficiency. Although some would accept just the presence of dyspnea as being sufficient to classify a patient as having respirstory insufficiency, others feel that hypoxia and hypercapnea are essential to this diagnosis. In past years, hospital admission with a pCO_2 over 55 mm. Hg was associated with a mortality of 30-50 per cent. This was clearly unacceptable and resulted in the advent of respiratory ICUs to provide the critical care necessary for these patients. This care includes obtaining appropriate smears and cultures to allow for proper antibiotic therapy, particular attention to bronchial toilet, chest physiotherapy and intensive monitoring of clinical status, vital signs, and arterial blood gases. IPPB is administered and, if necessary, *ventilatory* assistance following *endotracheal* intubation or tracheostomy. These techniques and the assignment of nurses specialized in the care of patients with acute and chronic pulmonary disease have resulted in a tremendous improvement in survival. In several reports as well as in our own unit, the mortality rate has been reduced to 10 per cent or less as compared to the prior figure of 30 to 50 per cent.

This is a highly significant step but, unfortunately, catches the patient near the end of his progressive illness. A much more rewarding effect can be obtained by furthering the preventive medicine aspects of pulmonary disease, particularly those aimed at preventing people from smoking and stopping those already afflicted with the habit.

What daily home regimen do you prescribe for the patient with chronic obstructive lung disease?

Although it has been shown that pulmonary rehabilitation programs and various treatment regimens do not seem to improve pulmonary function or prolong survival, there is evidence that patients in such programs do function more efficiently and more comfortably. I therefore recommend enrollment in a program of both breathing and general conditioning exercises as well as IPPB treatments at home.

"I...recommend...breathing and general conditioning exercises as well as IPPB treatments at home."

Bronchodilators are useful in some patients, and in severe cases of chronic obstructive lung disease a regimen including daily antibiotics—either ampicillin or tetracycline in doses of 250 mg. four times daily—seems to reduce the incidence of infection.

What are the prospects for successful lung transplants?

This is an exciting new area of research which has shown some promise of being a therapeutic modality in the future. There have been approximately 30 lung transplants done to date for terminal pulmonary disease with the longest survival being 10 months. We have performed four transplants at our institution, and one of our patients lived on room air without ventilatory assistance for almost six months. This man had been attached to a ventilator for three years prior to surgery, so we considered the transplant to be at least partially successful. In time, with improved immunosuppressive techniques, we feel that lung transplantation will be a therapeutic procedure with results that are similar to those obtained with kidney transplants.

What pulmonary function tests can the physician carry out in his own office? When should he turn to the laboratory?

The forced vital capacity (FVC) is a relatively simple test and, when combined with the forced expiratory volume in the first second (FEV_1), can be helpful in the diagnosis and management of patients such as those with obstructive pulmonary disease. There are many instruments available for office use which obtain the vital capacity, FEV_1/FVC, and maximum expiratory flow rate. Tests such as the gross response to bronchodilator therapy of an asthmatic patient can be followed quite adequately in the office. Specialized equipment is required for measurement of diffusing capacity, residual volume, compliance, exercise response, airways resistances, and arterial blood gases. We are becoming more aware of the fact that very early detection of chronic obstructive lung disease is necessary in order to observe improvement with treatment. At present specialized tests, such as closing volume and frequency dependence of compliance, are necessary for this and are almost exclusively done in pulmonary function laboratories.

Next In Consultation

DR. IRWIN I. LUBOWE, Clinical Professor of Dermatology, New York Medical College, and Attending Dermatologist, Metropolitan Hospital Center, New York; author of *The Modern Guide to Skin Care and Beauty*.

. . . will answer such questions as:

- Should patients be warned about photosensitization of the skin by certain drugs?
- What are beneficial effects of preventive ingestion of psoralen, pyrodoxine, and aspirin before sun exposure?

When cardiac complaints occur in the absence of organic findings, underlying anxiety may be one factor

The influence of anxiety on heart function

Excessive anxiety is one of a combination of factors that may trigger a series of maladaptive functional reactions which can generate further anxiety. Often involved in this vicious circle are some cardiac arrhythmias such as paroxysmal supraventricular tachycardia and premature systoles. Since these symptoms resemble those associated with actual organic disease, the overanxious patient needs reassurance that they have no organic basis and that reduction of excessive anxiety and emotional overreaction would be medically beneficial.

The benefits of antianxiety therapy

Antianxiety medication, when used to complement counseling and reassurance, should be both effective and comparatively free from undesirable side effects. Extensive clinical experience for more than 13 years has demonstrated that Librium fulfills these requirements with a high degree of consistency. Because of its wide margin of safety, Librium may generally be administered for extended periods, at the physician's discretion, without diminution of effect or need for increase in dosage. (See summary of product information.) If cardiovascular drugs are necessary, Librium is used concomitantly whenever anxiety is a clinically significant factor. (See Precautions.) Librium should be discontinued when anxiety has been reduced to appropriate levels.

For relief of excessive anxiety and related cardiac dysfunction

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Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states.

Contraindications: Patients with known hypersensitivity to the drug.

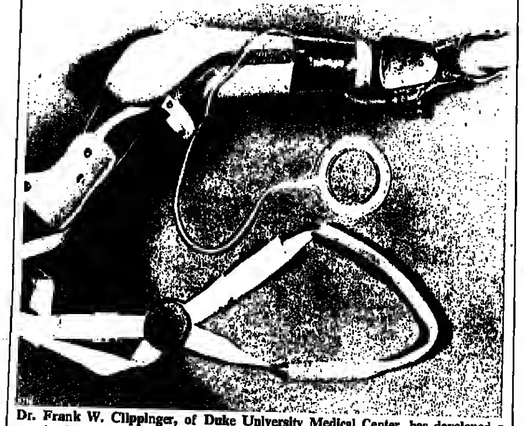
Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

Pressure Can Be Felt in New Prosthesis



Dr. Frank W. Clippinger, of Duke University Medical Center, has developed a prosthesis for the arm that will allow the amputee to feel pressure in the hook end of the limb. As the patient exerts pressure with the hook, the median nerve in his arm is electrically stimulated, producing a sensation that varies from light to strong in direct proportion to the force exerted at the hook.

RNA Found Able to Transfer Tumor Resistance in Animals

RESEARCH

Medical Tribune Report

ATLANTIC CITY, N.J.—Investigators from the University of Illinois, the National Cancer Institute, and the University of California at Los Angeles reported here, from two sets of animal experiments, that RNA is capable of transferring tumor resistance from one population of cells to another and from one animal to another.

Ronald Paque, Ph.D., of the University of Illinois, told the American Association for Cancer Research that when the Chicago-NCI group used two antigenically disparate hepatoma cells, both induced by diethylnitrosamine, as inocula to stimulate spleen and lymph node leukocytes, it found that RNAs extracted from the guinea pigs were specific for the cell line induced even though the carcinogen and the tumor site were identical.

Their assay, Dr. Paque reported, was the inhibition of movement of macrophages taken from peritoneal exudates of animals not exposed to the hepatoma cells but treated with spleen and lymph node RNA from guinea pigs that had received 3,000,000 of the liver tumor cells and BCG as a booster. The nucleic acid was extracted only from animals that successfully rejected the cells.

The two sets of hepatoma cells are known as line 1 and line 10. When macrophages from line 1 were put into the capillary tubes with RNA from animals that had injected line 1 cells, the exudate cells from unexposed animals were markedly inhibited in the macrophage inhibition test. But RNA from line 1-injected animals had no effect when antigen from line 10 was put into the tubes, Dr. Paque said. The RNA from line 10-injected animals.

RNA Role Considered

The investigators commented: "The RNA may well be dictating formation of receptors and/or mediating substances to reconstitute immunity in the peritoneal cells."

Coinvestigators were Berton Sbar, Herbert Rapp, Monte Meltzer, and Sheila Dray.

Dr. Yosef H. Pilch and Marian Lieberman Israeli, Ph.D., of U.C.L.A., also found RNA from spleen and lymph node cells but from tumor-"immunized" mice. These RNA extracts, added to cultures of insensitized spleen cells, boosted their cytotoxicity against target cells, they reported. They also found that intraperitoneal injections of tumor-immune RNA given every other day reduced tumor takes in mice challenged with fibrosarcoma.

Another finding was that liver RNA extracts were also capable of conferring some tumor protection and, further, that the process could cross species lines—RNA from guinea pigs injected with mouse tumor cells could also protect mice and produce the added cytotoxic effect.

Vitamin C Needs May Be 20 Times As High as 'RDA'

Continued from page 3

day level appeared to be close to the required three for good health, but whether it is high or low by 1 or 2 mg. "does not concern us. We are more concerned by the order of magnitude," Dr. Yew said.

"The burden of proof must now shift to the medical scientists who are really concerned about the health and physical condition of young people to show that considerations that apply to young guinea pigs do not apply to young people," she declared.

The investigator found that the vitamin C level needed by guinea pigs and by young human beings in order to prevent scurvy is about the same on a body weight basis. Thus, since the guinea pig level of adequate consumption in the research was found to be 250 times greater than the scurvy-prevention level, the hypothesis that human beings also need as much as 250 times the scurvy-prevention dosage appears possible.

Dr. Yew's study was published in the April, 1973, issue of *Proceedings* of the National Academy of Sciences. It was the rejection by the editors of *Proceedings* of Dr. Linus Pauling's article on vitamin C that led to his charges of censorship.

Cost of Health Care Rises 30% in Italy Over Last 12 Months

Medical Tribune World Service

ROME—The cost of health care in Italy has jumped 30 per cent in the last 12 months. The increase was due to a cost increment of 105 per cent for hospitals from 1969 to 1972, a rise of 20 per cent for medical expenses, and a larger number of visits required by patients.

Health Service Cuts Called an Attack On Family Planning Among the Poor

Medical Tribune Report

NEW YORK—Proposed Federal regulations to govern the funding of health service delivery projects for low-income persons have been sharply criticized by Dr. Alan F. Guttmacher, president of the Planned Parenthood Federation of America, as a "cynical exercise intended to dismantle or cut back drastically Federal health programs."

The proposals would "violate the expressed intent of Congress" when it adopted family planning and other specific health programs, he declared.

In a letter to the Health Services and Mental Health Administration, Dr. Guttmacher charged that "implementation of these regulations would lead to denial of family planning services to millions of low-income women who need and want them."

The proposals call for substitution of "third-party reimbursement" mechanisms for categoric project grant assistance. Such a move, according to Dr. Guttmacher, would "directly contravene—in fact, discard altogether"—the Administration's and President's expressed policy, reiterated in the introduction to the proposed regulations, that "no person is to be denied service solely because of inability to pay therefore."

Surgery-Immunotherapy Seen for Breast Ca

Medical Tribune World Service

MELBOURNE, AUSTRALIA—Some form of immunotherapy may in the future be combined with surgery for carcinoma of the breast diagnosed at stage 1, according to Sir Michael Woodruff, Professor of Surgery at the University of Edinburgh.

Twenty-five per cent of patients adequately operated on while the lump is small and confined to the breast still die within five years, Dr. Woodruff told a Symposium on Immunology and Cancer sponsored by the Royal Melbourne Hospital.

Sir Michael said he was impressed with results in a Kings-Cambridge trial designed to determine the fate of lymph node metastases following simple mastectomy. In one group of patients, palpable lymph nodes were not removed during the first two months after simple mastectomy; but they were watched and were removed only if they were clearly growing. Seventy-five per cent of these nodes ceased to be palpable.

This surely suggests that an immunologic process was occurring and makes a prima facie case for watching the node, Sir Michael observed.

He holds some hope, he said, that Corynebacterium parvum, a stimulator of macrophage activity, may provide the immunopotentiation needed.

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Washington and Watergate, Physicians and Patients

THERE IS AN OVERLAP in the cast of characters who constitute Washington's Watergate and Washington's relationship to physicians and patients. Physicians and patients are among the most important constituencies of the national administration. Historically, the American physician has voted Republican by an overwhelming majority, even in years of Democratic victories. In 1972 the bulk of our patients, who constitute the electorate, voted for the present administration. Among the things which the medical constituency and public electorate mandated were not further centralization of power in Washington but a decentralization; not a bigger national bureaucracy but a smaller bureaucracy; not further political *impingement* on individual rights but a *lessening* of governmental intervention; not for greater government control of medicine but a proper balance between government regulation and nongovernmental medicine in the interest of our patients and of science.

Among the questions now before the country is: What happened? In what way has the President's constituency been frustrated? The purely political issues are currently subject to multiple investigations and public inquiry. MEDICAL TRIBUNE has an added concern, one which is not yet the subject of public inquiry. In what way have Washington and Watergate impinged on or affected the rights of patients and physicians? MEDICAL TRIBUNE believes that all physicians and patients are entitled to assurance as a result of suitable inquiry that the integrity of governmental relationships with medicine was not violated. They have the right to know whether or not the people involved in Watergate or the principals behind this American tragedy either subverted the physician-patient relationship or tainted the therapeutic process.

A.M.S.

Immortality as a Side Effect of Antihypertensive Drugs

THE LAY PRESS, as well as the medical profession, is taking an active part in the campaign to control hypertension. A report in *Changing Times*, the Kiplinger magazine (June), appears a mite too enthusiastic in describing the salutary effects of hypotensive agents. "In a pioneer study," it states, "Dr. Edward Freis and fellow researchers in Veterans Administration hospitals found that anti-hypertensive drugs given male patients with diastolic pressures 105 or higher lowered the risk of death from one in five to almost zero."

The article in *Changing Times*, titled "Better Flod Out About High Blood Pressure," reflects a current surge of interest in hypertension in the lay press, so that blood pressure must now be running a pretty close second to the perennial favorite topic of overweight and diet. The titles reflect the message of these generally well-researched articles bringing news of latest developments on the medical scene. Among these are "America Has High Blood Pressure" (*The Floridian*), "The Bloody Pressure on 22 Million Americans" (*New York Times Magazine*), "See Hypertension Afflicting High School Kids" (*New York Post*), and *The Silent Disease: Hypertension* (Crown).

The latter is a newly published book by Lawrence Cinlinn with an introduction by hypertension researcher Dr. Frank A. Finnerty, Jr. It has been endorsed in advertising copy by such well-known figures as Dr. Theodore Cooper, director of the National Heart and Lung Institute; Dr. Michael E. DeBakey; and Dr. Edward D. Freis, who headed up the classic VA study that has shown the great benefits of controlling hypertension. With enthusiastic testimonials by these luminaries the publisher first waxed too strong in his promotional copy. On April 29 the *New York Times Book Review* carried a half-page ad headed "Half of the 24 million Americans who have high blood pressure don't know it—even though it's killing them. Are you one of them?" By June 3 the same ad in the *Times* had become headlined "You may be one of the 24 million Americans who have high blood pressure and don't know it even though it may be killing you." That is not quite the same thing.

Between the extremes of these macabre statistics and immortality, neither quite accurate, lies the truth; and the truth in hypertension does not have to lie to be impressive in either statistics of prevalence or gains in therapy.

R.S.G.

The Gynecologist and Today's Women

CLINICAL QUOTE: *"This generation of 'sexually liberated' women wants a generation of sexually educated gynecologists, physicians who are willing to tune in to their emotional problems and treat them with understanding, those who are willing to give the highest grade of medical care to changing problems, and those who are willing to give pertinent, objective sexual information without moralization. Gynecologists are expected to be partners in the contract for good emotional and physical care."* (Dr. Valerie Jorgansen, U. of Pa. School of Medicine, at the meeting of the American College of Obstetricians and Gynecologists; see page 1.)

"My conjecture on all this? We're being recalled for some defect."

LETTERS TO THE TRIBUNE

Laudanus

Editor, MEDICAL TRIBUNE:

I am writing to praise MEDICAL TRIBUNE. I find the color inlay in this journal beautiful, concise, and educative and want to convey how much my resident staff and myself admire this material.

ALBERT HAAS, M.D.
Director, Pulmonary Services
New York University Medical Center
New York, N.Y.

■

Feeding the Fetus

Editor, MEDICAL TRIBUNE:

"Pregnancy Is Nutritional Stress" (May 23) is overmuch on target regarding the problem of malnutrition during pregnancy. Being trained in public health, it never ceases to amaze me that dramatic crisis care must often be applied for lack of common-sense preventive care.

In a paper I coauthored with Lawrence Casazza, M.D., M.P.H., presented at the centennial meeting of the American Public Health Association, it was illustrated that the most simple monitoring of weight gain, blood pressure, and hematocrit could serve to classify a parous lower-socioeconomic population into nutritional high-risk and low-risk groups.

We feel that, with the most basic nutritional counseling during the course of pregnancy, the high-risk patient could be moved into the lower-risk group, resulting in an over-all improvement in infant mortality and morbidity.

MICHAEL H. MOSKOWITZ, M.P.H.
New Orleans, La.

■

Avoiding Amputation

Editor, MEDICAL TRIBUNE:

In reference to your article in MEDICAL TRIBUNE of May 9, entitled "Rising Life Spans Add Value to Amputation for Ischemic Legs," an alternative procedure of physiological and hygienic measures might be considered. In the article, it is stated that "while surgical reconstruction to repair damaged arteries and to revascularize ischemic tissues represents a brilliant recent accomplishment, the nature of occlusive arterial disease precludes definitive care by surgical means." For the many people who are suffering from occlusive arterial disease of their lower extremities, little solace and peace of mind is offered in your suggestion.

Intermittent claudication is an early symptom of such a disorder. In several cases of intermittent claudication with absence of popliteal and pedal pulses, pain and claudication disappeared after the performance of brief, maximal, extensive isometric exercises for six seconds repeated three times, three times a day, which seems to improve peripheral circulation substantially. This method of isometrics was published by Kiveloff and Huber in the *Journal of the American Geriatrics Society*. Further study and use of this method might alleviate the suffering from occlusive arterial disease of the extremities and the necessity for amputation.

BRUNO KIVELOFF, M.D.
New York, N.Y.

■

Role of Stilbesterol

Editor, MEDICAL TRIBUNE:

I have read the comments of Dr. Roy Hertz on the use of stilbesterol as a post-coital pill (May 16) with some interest. They provide no surprises, since Dr. Hertz has been at the extreme negative end in the argument about estrogens and cancer for the last 25 years.

His comments are entirely predictable and certainly do not represent the general view of cancer specialists. For the sake of providing a reasonable balance for your readers, I strongly urge you to get another opinion from an outstanding oncologist, such as Dr. Gerald Mueller at the University of Wisconsin.

I would also suggest that you ask a biostatistician, such as Prof. Alvin Feinstein, what he thinks of the association of stilbesterol pregnancy with adenocarcinoma of the vagina in offspring. I think you would find a rather different response than Dr. Hertz's interpretation.

JOSEPH W. GOLDZIEHER, M.D.
San Antonio, Tex.

■

Drug-Asthma Barrier

Editor, MEDICAL TRIBUNE:

After recently having to halt a brisk tennis game because of an asthma attack, I'm motivated to ask your help in getting the FDA to move faster on new drugs.

For us atopic people, it's very difficult to engage in sports. If we don't take the ephedrine-aminophylline compounds, the wheezing and inability to sweat curtails any vigorous exercise. If we do take the medication, we're either exhausted from the stimulatory side effects or we're so jittery we can't concentrate. Then our only alternative is steroids, which seems a little drastic just to play a tennis game.

For the past two to three years, both Intal (disodium cromoglycate) and albuterol have been available in Europe. The former is a nonsteroidal compound that inhibits SRS (slow-reacting substance) and histamine release. This release in reaction to environmental irritation seems overactive in atopic individuals. Albuterol is a beta stimulant, confined mostly to the beta 1 receptors. That is, the lungs, peripheral blood vessels, and liver are reacted upon without the cardiac, CNS, and lipolytic side effects. Why are these drugs being withheld?

CHARLES BERWALD, M.D.
Rochester, Minn.

Editor's Note: The FDA has just approved cromolyn sodium, produced by Fisons Corp. as Intal and by Syntex as Aarane.

. . . brief summaries of editorials or guest editorials in current medical journals.

Teaching Prevention

Are we physicians, "in our well-meaning desire to treat successfully an optimal number of patients, overlooking our overriding responsibility to inform not only our patients but the general public in matters regarding the prevention of disease? . . .

"Why should not we who have this knowledge of the causes of increasing disease rates inaugurate a well-thaught-out program of education for disease prevention. . . . We have the manpower and the resources to do it. . . .

"About 15 years ago, some county medical societies presented a few public forums on subjects relating to health. Most of them attracted standing-room-only audiences and were very well received. It would not constitute a burden to any medical society to staff a continuing program of health-oriented forums open to the public at no cost. . . .

"Even in those communities where only one or two doctors are available, it could still be most helpful to schedule . . . [such a] forum . . . every four to eight weeks. . . ." Another advantage is lowering the number of phone calls and night calls "substantially" through a better-informed public. Edgar Woody, Jr., M.D., editorial. (*J. Med. Ass. Ga. 62:149, May, 1973.*)

Town And Gown

"There are too few investigators able to convey research data to clinical audiences with clarity and effect. However, a broader effort would be possible if our research institutions periodically invited practicing clinicians to visit and examine the work underway. To what disease does it relate? Why is it significant?

"Researchers need practice in speaking with clinicians about these things" and vice versa.

"This doesn't happen at formal meetings where one speaks and all others listen. It has happened informally in the research departments, based on such 'open-house' invitations to clinicians. . . . A widening gulf between the two activities is dangerous as our knowledge becomes more specialized each year.

"Continuing education program credits can be given to clinicians who visit research centers. There are other ways to update knowledge besides taking courses and attending formal meetings. One is to spend time asking questions of an investigator as a planned activity scheduled for exactly that purpose. In order to speak to the public and to the government with one voice about our needs, we must first learn to speak among ourselves." J. O'Rourke, M.D., editorial. (*Eye Ear Nose Throat Monthly 52:206, June, 1973.*)

Reduction of Drugs

By international standards we in Sweden have a relatively small amount of registered pharmaceutical specialties. Despite this, periodic demands are made for a reduction in the number of drugs. It is mainly the so-called equivalent preparations that have come under fire. It is often pointed out that Norway gets along with fewer preparations than Sweden and has a considerably tighter legislation, making it next to impossible to register equivalent preparations. Be that as it may, Norway has just provided an example of what lack of equivalent preparations can lead to. Norway has only one digoxin preparation (Burroughs Wellcome and Co.'s Lanoxin); while Sweden has four. Last fall, when several countries deregistered Lanoxin because of absorbability problems, Norway was forced to retain it or switch to another digitalis glycoside, digitoxin. This has led to great uncertainty in the treatment of heart patients and has presumably also brought about therapeutic complications. Editorial. (*Läkartidningen [J. Swedish M.A.] 70:18, May 2, 1973.*)

Hormone-Monitoring System Signals Pregnancy Trouble

Medical Tribune Report

NEW YORK—A new system that not only monitors the progress of a high-risk pregnancy but also alerts the physicians to signs of fetal distress was described here by Dr. John C. Hobbins, Assistant Professor of Obstetrics and Gynecology at Yale University School of Medicine. It will prove to be "a valuable tool in the more objective management of pregnancy," he told a press conference at the New York Academy of Medicine.

The new test, which measures the amount of human chorionic somatomammotropin (HCS) in the serum of pregnant women, was evaluated clinically at Yale–New Haven Hospital under the direction of Dr. Hobbins, and was developed by Lederle Laboratories. Called Plac-Gest, the test was described as easy to perform and less expensive than fetal monitoring systems now available.

Normally, as gestation progresses, the amount of HCS in the maternal serum increases, Dr. Hobbins noted. In cases of fetal distress or a problem pregnancy, there is a plateauing or drop in HCS levels. Tests with the new system are started about the 20th week of pregnancy and continued monthly.

High-Risk Profile Indicated

"Levels of HCS below 4 micrograms per ml. after 30 weeks of gestation may indicate fetal jeopardy," Dr. Hobbins said. "This result, if found only on a single determination, is not sufficient by itself to cause alarm but should commit the patient to a full high-risk profile of other parameters of fetal and placental well-being."

Measurements of HCS were observed serially, he reported, in 35 pregnant women, including 10 normal and 25 high-risk women. Random samples were also drawn on members of a second group who were thought to be high-risk: 11 women had chronic hypertension or toxemia, 11 showed intrauterine growth retardation (IUGR), and three had postmaturity syndrome.

In 15 of 18 patients from both test groups delivering babies with IUGR, Dr. Hobbins reported, HCS levels were below 4 micrograms/ml. after 30 weeks of gestation, and in four of these the IUGR was not predicted by clinical criteria.

4 Babies Growth-Retarded

In four of the 11 patients with hypertension or toxemia, HCS levels dropped below 4 micrograms/ml. after 30 weeks' gestation and all four babies were growth-retarded at delivery and the placentas were small, he said.

The three mothers delivering babies with classical postmaturity syndrome had HCS levels between 3.7 and 5.0 micrograms/ml. after 42 weeks.

The HCS levels were high in nine of 11 patients with diabetes and correlated with placental size, but not with fetal well-being, Dr. Hobbins said. In two patients with diabetes, the levels were low, correlating with vascular disease.

"Levels of HCS showed a good general correlation with placental size," he said.

The Plac-Gest kit, which can be used to follow an entire pregnancy consists of six immunodiffusion plates allowing for single determinations of 18 to 28 samples, disposable capillary pipets, and HCS reference standards indicating high, intermediate, and low levels. An antigen-antibody response casts precipitation rings upon the plate, and the diameter of the rings, compared with the HCS standards provided, shows the HCS levels in the patient.

Child Malformations Linked With Maternal Alcoholism

Medical Tribune Report

BOSTON—An association between maternal alcoholism and a pattern of malformation in children born to such mothers was described here by a University of Washington School of Medicine investigator.

Dr. Kenneth Jones reported that the histories of eight unrelated children who exhibited a pattern of craniofacial, limb, and cardiovascular defects, as well as a notable deficiency in growth and development, had only one factor in common—a mother who was a chronic alcoholic.

Four of the children were seen as patients at the clinic run by the Dysmorphology Unit of the Department of Pediatrics. The histories of the four others were found in clinic records.

Craniofacial defects included microcephaly, short palpebral fissures, epicanthal folds, and maxillary hypoplasia. Limb defects were abnormalities of joints and altered palmar crease patterns. Cardiovascular anomalies consisted primarily of septal defects.

All Were Born Small

Dr. Jones and co-workers found that all the children were small at birth and remained below the third percentile for height and weight, "in spite of having a more than adequate caloric intake," he told the annual June conference on genetics and birth defects, which was sponsored by the National Foundation–March of Dimes and Tufts–New England Medical Center.

Past one year of age, their rate of linear growth was 65 per cent of normal and their weight gain was 38 per cent of normal.

Six of the children have been hospitalized for failure to thrive; two of them have been hospitalized six times for this reason. Three of the eight are now in foster homes, where they are receiving an adequate diet and excellent care, Dr. Jones related, but "they are still not catching up in growth."

"Some of these youngsters have siblings who appear to be partially affected by the mother's drinking and some have siblings who are completely normal," he commented.

Development performance of the eight children ranged from I.Q.s below 50 to the middle 70s.

In taking retrospective histories from the mothers, the Seattle investigators found that "these mothers are all on the young side, averaging 31.8 years in age and 9.4 years in their drinking habit."

Five of the mothers have been hospitalized with delirium tremens. Four of them lost weight during the pregnancy in question—15 pounds in one case. Two of them have been treated for cirrhosis.

From the pattern of malformations, Dr. Jones said, "it would appear that the damage to the children occurred during the first trimester."

Observing that there are no data in the literature concerning the offspring of alcoholic mothers, he reported that the Dysmorphology Unit is embarking on a prospective study of pregnant women in the Seattle area who are alcoholics.

Dr. Jones's coauthors were Dr. David W. Smith, Dr. Christy Ulleland, and Ann Pytkowicz Streissguth, Ph.D.

Society for Sex Education Is Organized in Israel

Medical Tribune World Service

HAIFA, ISRAEL—An Israeli society for sex education has been set here. It will encourage research into sex education methods, recommend specific books, organize symposiums, and promote counseling by trained persons.

Medical Tribune World Wide

Hepatitis A In Monkeys

ATLANTIC CITY, N.J.—A group of Chilean and Washington investigators has reported the neutralization of human hepatitis A in marmoset monkeys by convalescent human serum.

The report was presented to the American Society for Clinical Investigation by Dr. A. William Holmes, of Rush-Presbyterian–St. Luke's Medical Center.

This finding, according to Dr. Holmes, eliminates the need for human volunteers in most future studies of hepatitis A. It also should lead to complete identification of and preventive measures against hepatitis A viruses, he said.

Other investigators were Drs. Friedrich Deinhardt, L. Wolfe, G. Froesner, D. Peterson, and B. Casto, at Rush, and Dr. Marcel E. Conrad at the Walter Reed Army Medical Center, Washington.

In 1967 Drs. Deinhardt and Holmes reported the transmission of human hepatitis A to marmoset monkeys, but one laboratory suggested that the hepatitis observed in inoculated animals might have resulted from the activation of a latent marmoset virus.

The latest findings, Dr. Holmes said, prove conclusively that the human hepatitis A viruses, including biochemically and morphologically typical hepatitis, can be transmitted to marmosets.

Aspirin Injections Tried

LEGHORN, ITALY—Preliminary clinical results with water-soluble injectable lysine acetylsalicylate show that aspirin gives analgesic protection in this form over a much wider range than can be obtained with oral preparations, according to Dr. R. Bottici, of Leghorn Hospital.

He said that 0.9 Gm. of lysine acetylsalicylate with 0.1 Gm. glycine was used in 30 patients with various kinds of pain. The dosage was equivalent to 0.5 Gm. of acetylsalicylic acid per vial. One to four vials were injected either intramuscularly or intravenously.

The causes of pain included arthritis, migraines, fractures, and rheumatism.

Fourteen patients showed "excellent" results, six "good," five "average," two "fair," and three "none." There were no side effects, and none of the patients showed any sign of gastritis or hemorrhage of the digestive lining.

Dr. Bottici noted that the rapidity of administration is an important aspect.

"In some cases there was noticeable activity within 10 minutes after administration," he said.

Coauthors were Drs. A. Ferrucci and E. Taddeucci.

Aspirin Dosage Studied

AUCKLAND, NEW ZEALAND—Studies conducted over the past three years by the New Zealand Rheumatism Association have shown that it is safe for arthritis sufferers to take the recommended aspirin dosage of up to 12 tablets a day, under medical supervision.

Dr. Richard A. D. Wigley, of the committee that made the studies, said that no evidence was found to suggest that aspirin taken at this rate causes kidney damage. But he warned that kidney damage could occur in people who took larger than recommended doses of aspirin and other analgesics for prolonged periods.

Dr. Wigley reported on the committee's findings at the annual meeting of the Royal Australasia College of Physicians in Dunedin, New Zealand.

The rheumatism association, with the backing of the New Zealand Rheumatism Foundation, began research into the effects of aspirin three years ago after Dr. Priscilla Kincaid-Smith of Melbourne, Australia, declared that such analgesic drugs as aspirin, A.P.C., and aspirin-phenacetin-codeine caused kidney disease.

The association was afraid that these warnings would make patients reluctant to accept aspirin treatment.

Medical Tribune

HYPERTENSION BULLETIN

A CIBA SERVICE

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THE BREEDING OF HYPERTENSIVES

CLINICIANS HAVE LONG been aware, from studies of the early, middle and late years of adult life, that hypertension and its complications are frequently familial; that elevated blood pressure is more frequent in the children of hypertensive parents (one or both being so) than in those of nonhypertensive parents. But what about elevated blood pressures in very young children? Until recently, very little has been known about it, but from an ongoing study at Boston City Hospital's Channing Laboratory by Dr. Edward H. Kass of Harvard University Medical

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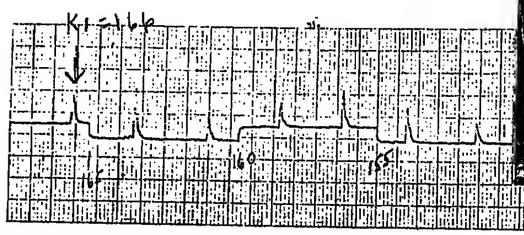
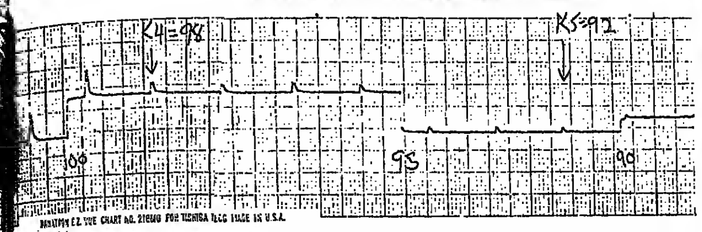
Dr. Stephen H. Zinner and Meredith





Example of sections of a tape read-out. To the left of photo, K1 = First Korotkov phase, systolic blood pressure—166 mm.Hg. To the right, K4 = Fourth Korotkov phase, or muffling diastolic pressure—98 mm.Hg. K5 = Fifth Korotkov phase, or "disappearance" diastolic pressure—92 mm.Hg. The Korotkov sounds are recorded as spikes above the baseline wave.

School and Dr. Stephen H. Zinner, Assistant Professor of Medical Sciences at Brown University, these facts have emerged:

- Familial aggregations of high blood pressure are as common in children as they are in adults.
- A so-called "clustering" effect among siblings, at all levels of pressure, can be detected as early as the first year of life.
- There is a definite and measurable long-term blood pressure trend among children, low readings remaining low over the years and high readings persisting.
- It is possible that environmental factors are in part responsible for elevated blood pressure in some children.

One question is, whether children with abnormally high blood pressure are destined to become clinically hypertensive at mid-life, and another, Would early administration of a mild hypotensive drug reverse the tendency?

Pediatricians had long asserted that reliable juvenile blood pressure readings were impossible to obtain; that young children could not be made to relax, were overly apprehensive.

"It seemed like a formidable problem," Dr. Kass said in an interview, "but we soon found that, as with many other things in medicine, a little common sense goes a long way."

Mother came first

He and Dr. Zinner took the blood pressure readings related to their study in the home. The familiar setting helped tremendously, he said, to reduce the child's anxiety; and to allay all fears, the mother's pressure was taken first, then that of the eldest child, down to the youngest.

"It worked like a charm. No problems whatever. We did three readings on each child, and they were consistent."

Cuff sizes recommended by the American Heart Association were used, and all data were gathered by a single observer, using a newly developed portable blood pressure recorder that minimizes observer variation and subjective error.

The instrument was developed by Dr. Kass in collaboration with Professor E. Mollo-Christensen of the Massachusetts

Familial aggregations of high blood pressure are as common in children as they are in adults.

Institute of Technology. It records on tape the Korotkov sounds through a microphone, along with a simultaneous calibration scale, and the tape can be played back.

The instrument is a modified mercury sphygmomanometer, wired at five-millimeter intervals to produce the calibration scale. As the mercury falls, contact with these electrodes activates an oscillator, which generates a high-pitched signal at alternate millimeter intervals. Blood pressure is taken in the usual manner. When the tape is played back through a single-channel recorder, such as an electrocardiograph, it produces a visual read-out.

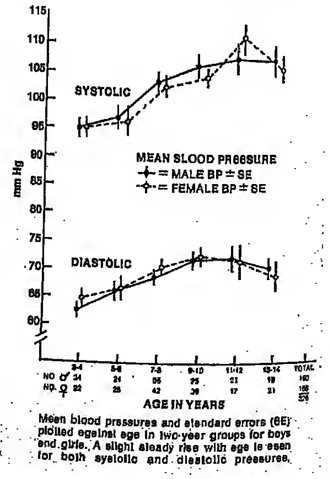
Two studies were carried out by Kass, Zinner and their associates over a 7-year period. In the initial one, 325 children aged 2 to 14, and 82 mothers, were studied. Blood pressures were expressed in standard deviation units (SDU), where SDU equals observed recorded pressures minus mean pressure for age and sex group, divided by blood pressures in that age and sex group. When adjusted for age and sex, children whose SDUs were found to be positive ran pressures higher than the mean, while those with negative pressures ran below the mean. The results showed the tendency of blood pressures to cluster in families at all levels of pressure. Tests of blood pressure values in the mothers against those of their children revealed a similar correlation. In short, clear evidence of familial aggregation.

"The data of that first study, confirmed in our 4-year follow-up, reveal, in terms of familial blood pressure aggregation, that children—even those as young as two years and on up to 14—are no different from adults. Our findings parallel adult measurements made by the British investigator, W. E. Miall, during the past 15 years.

"To put it another way, mothers with high, low, or so-called normal range blood pressure tend to have children with high, low or normal range pressure, and these tendencies towards aggregate blood pressure values are developed at a very early age."

"Getting on track"

The tendency of children to retain their same blood pressure status as they grow older was fully confirmed by the results of



Mean blood pressures and standard errors (SE) plotted against age in two-year groups for boys and girls. A slight steady rise with age is seen for both systolic and diastolic pressures.

the second Kass-Zinner study. And, said Dr. Kass, two things are very clear.

"First, sib-sib variances are significantly less than random variances, which confirms a preliminary finding in the initial study, specifically, that the familial aggregation phenomenon in children is now well established. Secondly, those children in the earlier study who had a positive standard deviation score [80 per cent] remained in that range four years later. Correspondingly, those with negative scores also retained negative scores. We call this 'getting on track'. Once on track, the indication is that you stay on it for the rest of your life."

The children in 15 of the families studied had pressure readings that put them on hypertensive track (2 or more positive SDU). This raises two questions of clinical importance: Are these, or some of these, children destined to become clinically hypertensive in their middle or late years? Would early administration of mild antihypertensive medication reverse this tendency? Dr. Kass comments:

"Only detailed prospective epidemiologic studies can answer these questions. At least we can say that there is a possibility that familial factors are responsible for essential hypertension. As for early

The trends are definite, lows remaining low over the years, and high readings persisting.

medication, at this point we just don't know, we have no data. I would not, however, be opposed to someone's trying to find out whether, by appropriate use of one of the milder, and hence safer, antihypertensive drugs, such children could be taken off the hypertensive track. It might be a reasonable thing to do. The trouble is, you wouldn't get an answer for years."

The Kass-Zinner investigation raises again a fundamental question about the etiology of hypertension: Is a predisposition to the disease genetic or environmental in origin?

"The classical view, of course, is that high blood pressure, leading in many instances to hypertension, is the result of a dominant gene effect. A certain amount of data has been accumulated to support this view. Some very able people subscribe to it.

Genes vs. environment

"Although at this time we don't have enough data to reject the gene theory out of hand, I lean toward the environmental explanation. I am very much influenced by the work of Sir George Pickering and Dr. Miall, who demonstrated that the blood pressure of first-order relatives was unimodally distributed.

"If there were a dominant gene effect, one would have expected first-order relatives of hypertensive individuals to show up bimodally. They did not, suggesting that an environmental factor, not a dominant gene, is the important thing.

"Our data were, in the main, obtained from a low socioeconomic group, typical of a large municipal hospital, and though no attempt was made to identify environmental or genetic factors, I think there is a certain amount of evidence to suggest that there may be some socioeconomic structuring to blood pressure, that environmental influences exert their effects early.

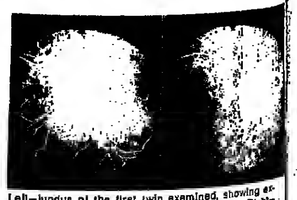
"There certainly is strong evidence that people in different occupations have different blood pressures. We all know that blacks have higher blood pressure than whites. Whether this is due to genetic or environmental factors is not yet known."

Participating in the study were Mrs. Olga Ulchak, R.N., Bernard Rosner, Ph.D. (statistician), and medical students Louis Martin and Frank Sachs. ⓘ

FAMILIAL DOUBLE TROUBLE

SIMULTANEOUS ONSET of malignant hypertension in identical twins "is an unusual manifestation of concordance of blood pressure... and underlines the role of heredity in essential hypertension". But what the mode of inheritance may be, added Drs. P. J. Lewis, D. F. J. Archer, and A. Breckenridge, of Hammersmith Hospital, London, remains controversial.

When they found malignant hypertension—240/160 mm. Hg—in their 29-year-old patient, his sole complaint had been hematospermia, intermittent over a three-year period. Findings after hospital admission included: papilledema, linear hemorrhages and several cotton wool spots in fundi; left ventricular hypertrophy on chest x-ray and ECG; blood urea 48 mg/100 ml, proteinuria 0.5 g/24 hours; normal urine culture and vanillyl mandelic acid excretion; intravenous pyelogram: left renal size, 12.5 cm; right, 11.5 cm.



Left—fundus of the first twin examined, showing extensive leakage of fluorescein angiogram dye. Right—second twin, dye leak from disc vessels.

Examination of his identical twin, who had also been troubled by intermittent hematospermia but was otherwise asymptomatic, revealed: blood pressure 220/160 mm. Hg; presence of hard exudates in fundi but no hemorrhage; pink optic discs with indistinct margins; papilledema, confirmed by fluorescein angiography; left ventricular hypertrophy on chest x-ray and ECG; blood urea 48 mg/100 ml, proteinuria 1.4 g/24 hours; normal urine culture and vanillyl mandelic acid excretion; kidneys somewhat contracted—left renal size, 11.3 cm; right, 10.8 cm. ⓘ

reports from abroad

HEIDELBERG, VICTORIA, AUSTRALIA—An association between severe hypertension and rheumatoid factor has been observed by Drs. A. Ebringer and A. E. Doyle of the University of Melbourne Austin Hospital. The rheumatoid factor detected by them by means of the latex fixation test in patients with hypertension "appears after the onset of vascular injury" and may result from the vascular damage induced by the hypertension.

They found the rheumatoid factor in 14 (48%) of 29 severely hypertensive patients, but in only 6 (18%) of 33 healthy normotensive blood donors—all 40 to 60 years of age. None of the patients had rheumatoid arthritis or any other chronic-tissue-damage disorder associated with increased rheumatoid factor. Though the incidence of this factor generally increases with age, the investigators consider it "unlikely that increased incidence of rheumatoid factor in hypertensive patients is due to age alone."

GLASGOW—Plasma concentrations of renin, renin substrate, angiotensin II, and aldosterone were significantly lower in the peripheral venous blood of women with hypertension and proteinuria in late pregnancy than in a control group of normal pregnant women matched for age, parity, time of gestation, and posture.

This report came from a group headed by Dr. Ronald J. Weis at the Medical Research Council Blood-Pressure Unit, Western Reserve Infirmary, and the Departments of Obstetrics, Queen Mother's Hospital, Royal Maternity Hospital, and Stobhill General Hospital.

The investigators concluded that the pathogenesis of hypertension during pregnancy cannot be ascribed to circulating levels of renin, renin substrate, angiotensin II, and aldosterone. The "suppression" of the renin-angiotensin-aldosterone system in hypertension in pregnancy may be the result, they said, of an adjustment to a raised circulating level of some unidentified pressor agent or mineralocorticoid.

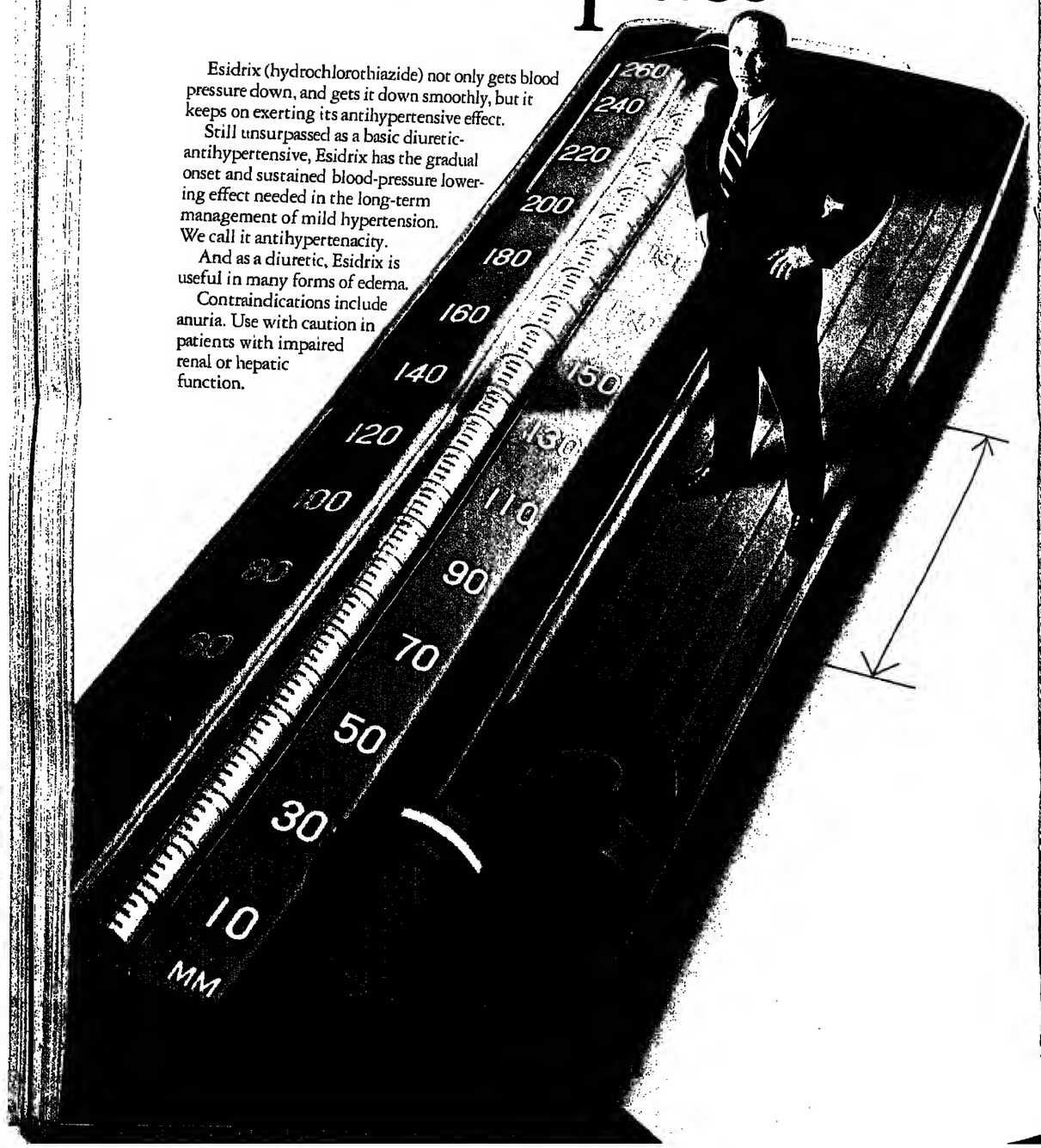
Keeping the mild hypertensive in his place

Esidrix (hydrochlorothiazide) not only gets blood pressure down, and gets it down smoothly, but it keeps on exerting its antihypertensive effect.

Still unsurpassed as a basic diuretic-antihypertensive, Esidrix has the gradual onset and sustained blood-pressure lowering effect needed in the long-term management of mild hypertension. We call it antihypertenacity.

And as a diuretic, Esidrix is useful in many forms of edema.

Contraindications include anuria. Use with caution in patients with impaired renal or hepatic function.



that's "Antihypertenacity" Esidrix® has it (hydrochlorothiazide)

Esidrix®
(hydrochlorothiazide)

INDICATIONS
Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the indications as follows:
Effective
Hypertension: In the management of hypertension either as the sole therapeutic agent or to enhance the effect of other antihypertensive drugs in the more severe forms of hypertension, and in the control of hypertension of pregnancy.
Edema: As adjunctive therapy in edema associated with congestive heart failure, hepatic cirrhosis, and corticosteroid and estrogen therapy.
Esidrix has also been found useful in edema due to various forms of renal dysfunction, such as the nephrotic syndrome, acute glomerulonephritis, and chronic renal failure.
In severe edema when due to pregnancy.
"Probably" Effective
Toxemia of pregnancy (eclampsia), engine due to congestive heart failure and/or hypertension, and "drug induced" edema.
Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS
Anuria; hypersensitivity to this or other sulfonamide-derived drugs. The routine use of diuretics in an otherwise healthy pregnant woman with or without mild edema is contraindicated and possibly hazardous.

WARNINGS
Use with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. Cumulative effects of the drug may develop in patients with impaired renal function.
Thiazides should be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte imbalance may precipitate hepatic coma.
Thiazides may be additive or potentiative of the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic blocking drugs.
Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.
The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.
Usage in Pregnancy
Usage of thiazides in women of childbearing age requires that the potential benefits of the drug be weighed against its possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.
Nursing Mothers
Thiazides cross the placental barrier and appear in cord blood and breast milk.

PRECAUTIONS
Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals. All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: namely, hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs are dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbance such as nausea or vomiting.
Hypokalemia may develop with thiazides as with any other potent diuretic, especially during brisk diuresis, when severe cirrhosis is present, or during concomitant administration of steroids or ACTH.
Interference with adequate oral intake of electrolytes will also contribute to hypokalemia. Digitalis therapy may exaggerate metabolic effects of hypokalemia especially with reference to myocardial activity.
Any chloride deficit is generally mild and usually does not require specific treatment except under extraordinary circumstances (as in liver disease or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.
Transient elevations in plasma calcium may occur in patients receiving thiazides. This may be more pronounced or sustained in patients with hyperparathyroidism. Pathological changes in the parathyroid gland have been reported in a few patients on prolonged thiazide therapy.
Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.
Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Latent diabetes may become manifest during thiazide administration.
Thiazide drugs may increase the responsiveness to tubocurarine.
The antihypertensive effects of the drug may be enhanced in the postsympathectomy patient.
Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.
If progressive renal impairment becomes evident, as indicated by a rising non-protein nitrogen or blood urea nitrogen, a careful reappraisal of therapy is necessary with consideration given to withholding or discontinuing diuretic therapy.
Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

ADVERSE REACTIONS
Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic), pancreatitis
Central Nervous System: Dizziness, vertigo, paresthesias, headache, xanthopsia
Dermatologic-Hypersensitivity: Purpura, photosensitivity, rash, urticaria, necrotizing angiitis, Stevens-Johnson syndrome, and other hypersensitivity reactions
Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia
Cardiovascular: Orthostatic hypotension may occur and may be potentiated by alcohol, barbiturates, or narcotics
Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness.
Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

DOSAGE AND ADMINISTRATION
Therapy should be individualized according to patient response. Dosage should be titrated to gain maximal therapeutic response as well as the minimal dose possible to maintain that therapeutic response.
Hypertension
To Initiate Therapy: Usual dose is 75 mg daily. May be given as a single dose every morning.
Maintenance: After a week dosage may be adjusted downward to as little as 25 mg a day, or upward to as much as 100 mg daily.
Combined Therapy: When necessary, other antihypertensive agents may be added cautiously. Since this drug potentiates the antihypertensive effect of other agents, such additions should be gradual. Dosages of ganglionic blockers in particular should be halved initially.
Edema
To Initiate Diuresis: 25 to 200 mg daily for several days, or until dry weight is attained.
Maintenance: 25 to 100 mg daily or intermittently depending on patient's response. A few refractory patients may require up to 200 mg daily.

HOW SUPPLIED
Tablets, 50 mg (yellow, scored) and 25 mg (pink, scored); bottles of 100, 1000, 5000 and Strip Dispensers of 100. Rev. 9/72

CIBA Pharmaceutical Company
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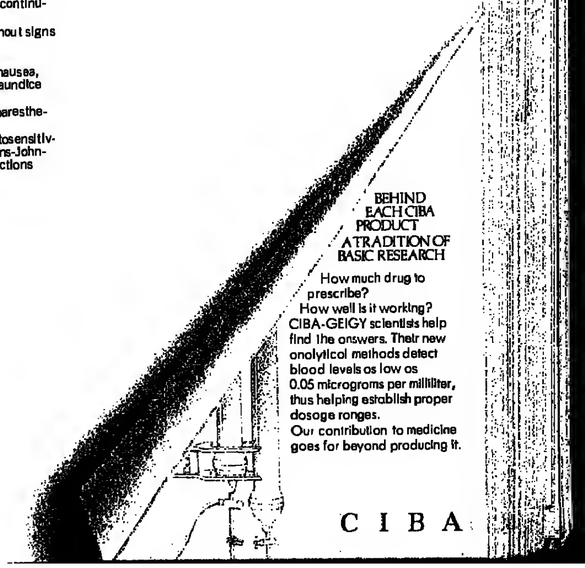
Summit, New Jersey 07901



HYPERTENSION CLASSICS

—Korotkov's auscultatory method

Courtesy L. A. Geddes, Ph.D.

LEGEND HAS IT that Nikolai Sergeyevich Korotkov first heard the sounds which now bear his name in the auscultatory method of blood pressure determination while he was serving as first senior physician in a division of the Czar's army on the Siberian front during the Russo-Japanese War of 1904-05. He is said to have detected the sounds in aneurysmatic vessels.

That may be. Little is known of Korotkov. He was born in 1874, took his degree at the University of Moscow in 1898, was at the Moscow clinic of Prof. C. P. Fedorov when he presented his *Contribution to the Problem of Methods for the Determination of Blood Pressure* to the Imperial Military Medical Academy, St. Petersburg, in 1905, and died of pulmonary tuberculosis on March 14, 1920, nearly two decades before the American Heart Association and the Cardiac Society of Great Britain gave his method their official recognition. Dr. Arthur Ruskin, in *Classics in Arterial Hypertension* (1956), says of Korotkov: "...a sort of scientific meteor."

Bright streak he was; but many of the physicians who heard his paper in 1905 might rather have described him as hallucinatory.

He stated that he had come to the conclusion that normally no sound is produced by the completely compressed artery and proposed an auditory method of determining the blood pressure:

"Riva-Rocci's cuff is placed over the middle third of the upper arm and the pressure in the cuff quickly raised to occlude circulation below the cuff. The mercury in the manometer is allowed to fall while listening to the artery just below the cuff with a stethoscope.

"With the fall of the mercury in the manometer, down to a certain height, the first short tones appear; their appearance indicates the passage of part of the pulse wave under the cuff."

He noted that, with further fall of the mercury, finally all sounds disappear and that "the manometric figure at this time corresponds to the minimal blood pressure." For the first time, a noninvasive method of determining the diastolic pressure had been described. But there were dissenting voices:

B. G. Bozhovsky: "The mechanism of the formation of murmurs is understood and does not require special explanations, but I cannot agree with you at all about the local development of the sounds."

I. A. Shapovalenko: "In your experiment one cannot explain the origin of the second sound by the opening of the vessel, because the blood flow is uninterrupted at this time. It seems to me impossible to determine the minimal pressure by your method."

However, it was not entirely so. *Prof. M. V. Ynovsky* said: "I must say that in your investigations you have shown marked talent and ingenuity. You easily grasped that fact which many investigators concerned with this question have passed by unnoticed." ⓘ

Your patient may be reading:

A hypertension primer for the inquisitive patient answers What is it? How?

WHEN THE IRRITATION and annoyance of repeated explanations to hypertensive patients sends the physician's own blood pressure up, he may find some information for his patient—with accompanying relief for himself—in a new book by Lawrence Galton, "The Silent Disease: Hypertension," Crown Publishers, $5.95.

As a medical writer for *The New York Times* and various magazines, Galton's initial interest in hypertension was professional, but became personal when he was told he was a labile hypertensive.

His doctors—and he was sure he had good ones, he says—"pooh-poohed" for years his occasionally elevated pressures, telling him they would drop. They didn't. His systolic pressure was stabilized between 155 and 160 mm. Hg, and his diastolic at over 100 mm. Hg. Galton's interest in hypertension rose with his pressure and he became convinced, he says, of the need for a book to "tell the whole story of hypertension and why it is serious and the problems involved in treating it."

In explaining the basics under the chapter heading of "What Is It? What Does It Do? How?", Galton details the damage done to vital organs by hypertension, and relates hypertension to strokes and atherosclerosis, and atherosclerosis to heart attacks.

The history of the development of antihypertensive drugs is outlined before Galton reaches the chapter which will probably draw the immediate interest of the patient who learns that he is a hypertensive: "Arriving at the Right Treatment for You".

"The aim of treatment is to bring down the blood pressure to normal or near-normal levels and keep it there."

To do this in the vast majority of cases of uncomplicated essential hypertension, Galton says, "Many physicians often find it advisable to begin with a thiazide diuretic. Through its effect on the excretion of salt and excess fluid..., such an agent may bring pressure down to normal levels. It may be used in smaller doses twice a day or in a larger dose once a day. Within a few weeks to a month, it should be clear whether a diuretic alone will suffice.

"If the blood pressure falls to normal levels with a diuretic, your physician may then try a smaller dose, seeking to establish the minimum necessary to keep your blood pressure down."

Galton's own blood pressure was controlled quite easily, he says, and without side effects. Recognizing that all are not so lucky, the author details the side effects of reserpine, hydralazine, alpha methyldopa and guanethidine.

Having done that, Galton continues with arguments for drug treatment that will probably echo what many physicians are telling their patients, especially those with moderate hypertension.

"The fact is that the most striking gains in patients with moderate and severe elevations given effective antihypertensive drug treatment have been in the prevention of strokes and congestive heart failure. There is still room for further improvement..., certain to come as drug treatment now is applied increasingly to milder elevations...further minimizing the risks of complications...."

It is a repetitious book. But it may be argued that repetition is a learning technique. And there is plenty to be learned. The patient who reads it before he sees his doctor may be prepared to demand a pressure reading from the leg to eliminate any possibility of coarctation of the aorta. ⓘ

New Orleans:

Lesson in BP surveying

IN THE LARGEST HYPERTENSION screening project ever, the blood pressures of some 30,000 persons 19 years of age or older were checked in New Orleans in two days.

Thirty per cent (9,038 persons) had elevated readings and were referred to their physicians for further evaluation. In an earlier study of high blood pressure in the black population in New Orleans, 36 per cent of 11,000 persons screened were found to have elevated readings.

Data being processed will break down those referred by age, sex, race and school district tested, and will show whether the *referral was* based on a high systolic (160 mm. Hg or above) or a high diastolic (90 mm. Hg or above) pressure, or both.

The blood pressure readings were taken by approximately 900 volunteers, according to Dr. Stanley Garbus, Louisiana State University Department of Medicine, chairman of the screening committee.

Included were some 400-500 medical students and 200-300 nursing students from Tulane and LSU, working nurses, a small number of physicians, policemen and firemen from rescue squads, and a few military medical corpsmen, of whom some were trained specifically for the screening.

Dr. Garbus believes the blood pressures taken were well controlled for accuracy but conceded "room for variation" in such a large study, noting that in trial runs readings of the same pressure by physicians and professors of medicine varied as much as 10-15 per cent.

Volunteers work in shifts

Dr. James Reynolds, president of the Louisiana Heart Association, which sponsored the screening jointly with CIBA Pharmaceutical Company, said the readings were often, but not always, double-checked by the most experienced person on hand.

The volunteers operated in teams that worked four-hour shifts at 43 public and parochial senior high schools. The Communicable Disease Center in Atlanta supplied some of the cuffs and stethoscopes that were borrowed. Clerical assistance came from other volunteers.

The percentage of persons found to have elevated blood pressures varied from about 18 per cent at some schools to as high as about 45 per cent at others, Dr. Garbus said. Data from the screening will be compared with the New Orleans census data of 1970 for racial and other socio-economic correlations.

It is expected, Dr. Reynolds said, that predominantly black neighborhoods will show the highest percentage of referrals. New Orleans' population is approximately equal parts black and white.

The first step of the screening, as Dr. Reynolds and Dr. Garbus described the

City even calls out the National Guard in a study of how to conduct massive hypertension screening.

logistics, was to get the endorsements of the local medical societies. A full-time coordinator was hired. Letters alerted every doctor in the area to a possible influx of patients from the screening. The publicity started three weeks before the screening weekend and centered on the schools, daily newspapers and radio and TV stations. National Guard volunteers offered security at each testing site. Back-up volunteers and equipment were dispatched by amateur radio operators.

Follow-up under way

Each person tested was asked whether he was aware of having high blood pressure and whether he was being treated for it. For those with elevated pressures who had no private doctor, there was a list of physicians (supplied by the medical societies), and a list of health clinics, and a form (stamped envelope attached) for the physician rechecking the pressure.

What remains to be seen, Dr. Reynolds said, is how many of those who were referred will go to doctors, how many of these will carry their forms, and how many forms will be returned by doctors.

The effort to gather support for this follow-up is under way, Dr. Garbus said, calling it a "medical and moral" responsibility.

Dr. Garbus said there are preliminary plans to screen a minimum of 10 per cent of Louisiana's population, 3-400,000 persons, including all the major cities at least once and maybe twice, and some smaller communities. A screening in Baton Rouge is planned for the fall, and a second screening in New Orleans for October, 1974.

"We would like to complete the screenings by the end of 1975 and compile enough data by the end of 1976 to be able to offer suggestions to our own state health departments and to the federal health authorities about how to conduct a hypertension screening."

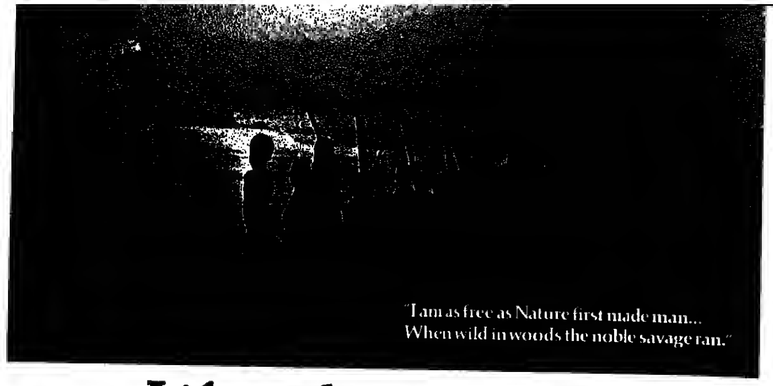
More than 100,000 persons across the country have been screened for high blood pressure to date by Community Hypertension Evaluation Clinics (CHEC) and 28 per cent have been referred. ⓘ

DR. SOL SHERRY, 56, is Professor of Medicine and chairman of the department, Temple University School of Medicine, Philadelphia, and director of its Specialized Center for Thrombosis Research. He says: "My blood pressure is normal, by which I mean it's less than 150 over less than 90. That second figure is a lot more significant, of course."

He never takes his pressure himself, and never has it taken by anyone else unless he's sick, but he's very rarely sick. He describes himself as a "bad patient" so far as his blood pressure is concerned.

Dr. Sherry is five feet nine and a half inches tall, weighs 174 pounds, and is mildly concerned about a small obesity problem that manifests as a minimal paunch "below rather than above the waist." He has never smoked cigarettes but started smoking a pipe when he was 18, and says that he smokes a lot. His family blood pressure history is negative. During one recent afternoon, he moved frequently and easily about his office, going from desk to slide cabinet, back to his desk, hunting for a book in the bookcase, to his outer office in search of a picture. He turned down mid-afternoon coffee in favor of tea and refused a slice of birthday cake.

He does not deliberately relax during the day to keep his blood pressure down. "I go all day, and take a drink when I get home. When I work in the evening, I work in a quiet place, without pressure, and that makes life bearable." ⓘ



Life without tension

Boston investigators find tribal peoples completely free of hypertension and cardiovascular diseases.

AN EXPEDITION FROM BOSTON that went to the ends of the earth to gather ethnographic, anthropometric, genetic and medical data found that tribal peoples living as primitive slash-and-burn cultivators and fishermen on islands in the South Pacific appear to be completely free of the hypertension and coronary vascular diseases that are now endemic in societies of mechanized man.

The investigators, led by Drs. Lot B. Page, Professor of Medicine, Tufts University School of Medicine, and Robert Moellering of Massachusetts General Hospital, and anthropologist Albert Damon, M.D., Ph.D., of Harvard, studied six Solomon islands tribes, three on Bougainville and three on Malaita, over a period of four years. Three of the group are partially acculturated, three are considered unacculturated, having minimal contact with peoples from Western cultures. Some of the tribes rarely use salt, some use it regularly.

BP rise with age, abnormal

A force of 12, sent off by the Peabody Museum and Department of Anthropology, Harvard, studied 2,586 men, women and children among the six tribes. Medical studies, which emphasized cardiovascular epidemiology, included physical, ophthalmologic and dental examinations, serum cholesterol, blood urea nitrogen, chest films, ECGs and blood pressure readings. What Western societies have regarded as a normal part of aging is possibly a disease process—leading to essential hypertension—the investigators suggest; and add that "the failure of blood pressure to rise with age is normal in human beings," and that "a rise in cholesterol level and an age-related rise in blood pressure" are attributable to an acculturated way of life.

• Of the three tribes on Bougainville:

The *Nasioi* have had continuous contact with European culture for 85 years, particularly since 1966, when extensive copper mining within the tribal area began. The primary economy since World War II consists of settled agriculture with cash-crop cultivation. Staple food is kumara (a sweet potato), bananas and other fruits. Though pigs and chickens are raised, they are eaten only on festive occasions. Tinned meat and fish, rice and bread are purchased. Salt is used regularly.

The *Nagovisi* have had fairly intense contact with Western culture for 30 years. They are settled agriculturalists and are moving rapidly into a cash economy. Diet is similar to that of the *Nasioi*. Affected by the influx of Europeans, most consume some kind of European food at least every other day. Salt is used regularly.

The *Aita* tribe practiced cannibalism until at least the late 1950s, but since the mid-1960s they have had sudden and moderately intense exposure to Western influences. Some have become wage earners. Diet consists mainly of taro plus sweet potato and greens. They do not raise pigs.

• On Malaita Island, not occupied during World War II:

The *Kwaio* are the least acculturated, having had very slight contact with Europeans. They live in scattered hamlets and practice swidden (slash-and-burn) agriculture, moving from year to year. Diet consists primarily (85 per cent) of kumara, some leafy vegetables, insects, grubs and fresh water prawns. Pigs are kept, but are eaten only on ceremonial occasions and mainly by the men. Salt is rarely used.

The *Baegu* are similar in many ways to the *Kwaio*, but with somewhat greater Western influence. They are swidden farmers of taro and kumara, but are beginning to change to settled agricultural patterns. Diet includes salt and salty items only occasionally. Fish and meat form five to 10 per cent of diet.

The *Lau* population density is great. They are fishermen, and diet includes copious amounts of salt water in cooking vegetables. From trading vessels they frequently obtain Western goods and foods.

Arteriolar changes absent

In general, these Solomon islanders are well nourished and in robust health. Clinical coronary disease and atherosclerosis are very rare. Retinal examination shows "a striking absence of arteriolar changes even in the elderly."

Though "hypertension has a low prevalence in the Solomon Islands," and no age-related rise in blood pressure was found in unacculturated groups, an age-related rise in pressure was observed in the acculturated groups, earlier in females than in males.

No age-related elevation of cholesterol was apparent, but levels were higher in acculturated than in unacculturated groups.

A "definite and somewhat puzzling pattern" of uric acid values in relation to cholesterol was seen. Other investigators have shown that these values parallel each other as acculturation proceeds. The Boston group found, however, in all six of the tribes, an inverse relationship, i.e., high uric acid levels in the least acculturated, lower levels in the more acculturated.

Attempting to link specific factors with the trends they observed, the investigators note that "the most constant feature of the acculturating Solomon islanders is dietary change, and especially a marked increase in the use of salt and salty foods." ⓘ

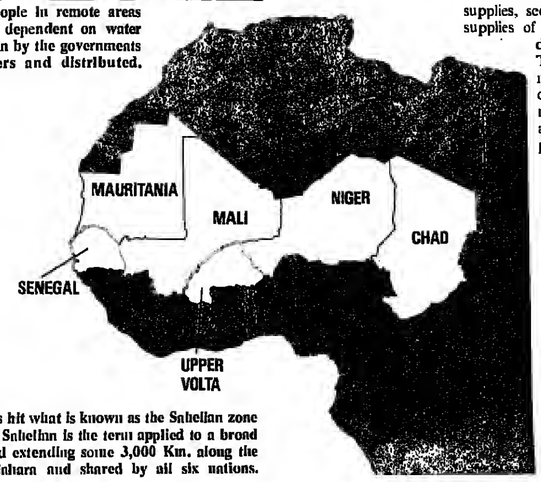
UPI Photo

Many people in remote areas are now dependent on water brought in by the governments in tankers and distributed.

6 Nations in West Africa Battling Against Drought

THE WEST AFRICAN COUNTRIES of Mauritania, Senegal, Mali, Upper Volta, Niger, and Chad are in their fifth year of drought. Of the 30,000,000 people in the six countries, "about one-third are now weakened by hunger and malnutrition and some people are dying," according to a Food and Agriculture Organization (FAO) official. The World Food Program, sponsored jointly by the FAO and the United Nations and UNICEF, is airlifting food, medical supplies, seeds for crop planting (many of the existing supplies of seeds have been eaten), and equipment to deepen existing wells to the stricken countries. The leaders of the six nations are planning to meet in August in Ouagadougou, the capital of Upper Volta, to try and find ways for the region to make best use of the relatively small and uncertain water supplies and agricultural possibilities on a long-range basis.

Wide World Photo



The drought has hit what is known as the Sahelian zone of West Africa. Sahelian is the term applied to a broad belt of arid land extending some 3,000 Km. along the south of the Sahara and shared by all six nations.

Pictorial Parade Photo

It has been estimated that as many as 2,000,000 head of cattle might perish as a result of the drought. Food distribution like that taking place in the photo at left has become an urgent necessity. According to officials, many families are limited to one meal every two days. In some rural areas 90 per cent of the people are short of food. UNICEF is supplying a high-protein food mixture of corn, soybean, and powdered milk enriched with proteins and vitamins known as CSM, which has been used effectively in previous emergency campaigns for feeding children.

It is considered essential to revive thousands of wells that have gone dry—not only to provide for current needs but also so future crops may be planted. UNICEF funds are being used to pay well-digging teams to build wells like the one at right, which is now operating and serving four to five villages.

If there's good reason to prescribe for psychic tension...

When, for example, reassurance and counseling on repeated visits are not enough.

Effectiveness is a good reason to consider Valium® (diazepam)

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Valium is one to consider closely. One that can help to relieve the psychic tension and anxiety. One that can minimize the patient's overreaction to stress. One that is useful when somatic complaints accompany tension and anxiety. In short, one that can work and work well to help bring the patient's symptoms under control.

Effectiveness. One good reason to consider Valium.

And should you choose to prescribe Valium, you should also keep this information in mind. It is usually well tolerated; side effects most commonly reported have been drowsiness, fatigue and ataxia. Patients taking Valium should be cautioned against operating dangerous machinery or driving.

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ROCHE

Vasovasostomy Productive in Only 1 Out of 5

Medical Tribune Report

NEW YORK—The man who has undergone a vasectomy has only a one-in-five chance of ever fathering a child if he elects to reverse the procedure, a panel of urologists warned here at a meeting of the American Urological Association.

Reporting on a questionnaire sent to members of the association on their experience with vasovasostomy, Dr. Fletcher C. Derrick, Jr., of George Washington University School of Medicine, Washington, D.C., said that replies from 540 physicians who had done the procedure indicated that the subsequent average pregnancy rate was 19.5 per cent.

Dr. John W. Dorsey, of the University of California College of Medicine, Irvine, reported that in his series of 129 patients, the pregnancy rate, "based on inadequate follow-up," was about 18 per cent.

Dr. Derrick's survey showed a 38 per cent chance of sperm return following vasovasostomy, and Dr. Dorsey's study showed 88 per cent.

The gap between the ratio of sperm return and pregnancy success, said Dr. Derrick, is due to a number of factors, including one that he called "fertility relativity." Many couples, he noted, have difficulty in achieving pregnancy, and yet, when the couples are mixed, as after a divorce and remarriage, pregnancy may ensue.

Take a Two to Tango

"You just can't say that a man, or a marriage, is sterile or fertile on the basis of either a normal or abnormal male or female," he declared. "It is always fertility relative—it takes two to tango."

"In discussing a vasovasostomy with a patient," Dr. Derrick continued, "I usually use round figures. I tell him that from my experience there is a 50-50 chance of helping him to recover sperm in his semen. With recovery of semen, he then has a 50-50 chance of getting his wife pregnant."

The two physicians, as well as Dr. Abel J. Leader and Samuel D. Axelrad, both of the vasectomy clinic at Planned Parenthood, Houston, Tex., and Dr. Joseph E. Davis, president of the Association for Voluntary Sterilization, agreed that the patient who seeks to reverse a vasectomy should be told that the statistics at present indicate that reversal is not probable.

There was also consensus that the surgeon performing a vasectomy should take every precaution to increase the possibility of reversibility.

This would include, said Dr. Dorsey, doing the vasectomy higher up, away from the convoluted portion of the vas deferens.

"The closer you get to the epididymis, the more angulated the vas and the smaller it is in caliber," he said. "This makes the procedure extremely difficult and sometimes impossible to achieve a satisfactory anastomosis."

He noted that when anastomosis of the vas deferens is not technically feasible, epididymovasostomy should be attempted.

Dr. Dorsey added that, in his experience, a previous unsuccessful attempt at vasovasostomy is not a contraindication to reoperation. Nine of his cases, he reported, were subjected to reoperation. In five, successful results were achieved on the second operation, and a sixth patient required three attempts. He said that success is predicated on the presence of viable sperm in the ejaculate in numbers varying from 7,000,000 to over 100,000,000 spermatozoa per cc.

Drs. Axelrad and Leader reported that their study of 2,711 vasectomies "attests to the safety and innocuousness" of the procedure in a clinical setting and under local anesthesia. Their results indicate, they said, that approximately one in 400 procedures will fail.

Vasectomy "Not Infallible"

"From this we must deduce that vasectomy, although the most effective form of surgical contraception presently available, is not infallible, and this point must be stressed in order to avoid medicolegal complications," they commented.

In 2,227 vasectomies in which cotton ligatures were used to occlude the vas ends, the major complication rate was 4.4 per cent. In the 484 cases in which hemoclips were used, it was cut to 2.7 per cent.

Fifty-three vasectomies were performed in the face of pre-existing medical conditions usually contraindicating outpatient vasectomy. The surgeon was aware of the condition prior to surgery and the patient was informed of the increased risk.

"Neither major or minor complications developed in any of these patients," the urologists said.

Heart Care Units In Massachusetts Found Underused

Medical Tribune Report

CAMBRIDGE, MASS.—Massachusetts facilities for the treatment of coronary heart disease are, on the whole, underused and haphazardly distributed, a Harvard Medical School study reports.

The study, by the Department of Preventive Medicine and the Graduate School of Design's Laboratory of Computer Graphics, used computer models to examine the present accessibility, capacity, and expected use of the Commonwealth's 94 coronary care centers.

Elimination of some centers and a reshuffling of the patient load in those remaining were recommended, to ensure that no unit is overtaxed or left with empty beds.

Bernard Bloom, principal associate in the Department of Preventive and Social Medicine, directed the investigation.

Units Should Be Near

In conducting the study, the team presumed that coronary care units should be no more than 30 minutes' drive from potential heart patients, that every patient should have a 95 per cent or greater chance of admittance to a center at any time, that the five major teaching hospitals in Boston retain their existing CCU's, that at least one CCU exist in each of the suburban areas around Boston, and that each unit have at least eight beds.

Calculations indicated that the number of centers could be reduced 59 per cent and the number of beds 25 per cent, from 466 to 356. Only one new CCU, on Nantucket, seemed indicated.

Philatelic Item

José Felipe Flores

Born in Chile, José Felipe Flores (1751-1814) received his medical degree from the University of Santiago de Chile in 1773. In 1785 he joined the San Juan de Dios in Guatemala as house surgeon. Studying later at European universities, he brought back knowledge of the latest medical advances, particularly in anatomic dissection and preparation for surgery, to Central America. He also introduced the use of wax anatomic models as a teaching tool.

Guatemala issued the stamp honoring Dr. Flores on December 12, 1962.

Text: Dr. Joseph Kler
Stamp: Minkus Publications, Inc., New York

One Man... and Medicine

ARTHUR M. SACKLER, M.D.,
International Publisher, Medical Tribune

'Ages in Chaos'

IN HIS *Ages of Chaos*, Velikovsky expands on his thesis that a natural global catastrophe occurred at the time of the Exodus of the Israelites from Egypt.

The consequences of his hypothesis sweep across the chronology of the Mediterranean basin and in their sweep convert a number of legends or "nonhistory" into reflections of historical events. The Holy City apparently has been a holy city for millenniums. In *Ages of Chaos* much that is in the Scriptures takes on a new dimension. How many characters of the Bible are really historical personages? Is the Queen of Sheba, for example, a mythical figure or a real queen? Are the carvings on the temple wall at Karnak an inventory of the vessels and furnishings of the Jerusalem temple? Could the plagues of the Exodus, the parting of the waters, the smoke, fire, and rumblings of Sinai of the "Biblical story," have been manifestations of a natural catastrophe? Could they have been related to a titanic cataclysm of global forces? Were there other records which corroborated Biblical events? Velikovsky attempts to separate the literal from the figurative in the "holy books."

Astonishing Similarities

It was about 1940 when Velikovsky read in the library of the Metropolitan Museum of Art a passage from the Egyptian Papyrus of Ipuwer (translated in 1909), which has been preserved at the University of Leyden since 1828. With this lead, Velikovsky proceeded to seek an integration between the Bible and Egyptian and other documents. Velikovsky juxtaposed Biblical phraseology with that of language of the papyri. The parallels were uncanny:

Exodus 7:20 ". . . all the waters that were in the river were turned to blood."
7:24 "And all the Egyptians digged round about the river for water to drink; for they could not drink of the water of the river."

Papyrus 2:10 "The river is blood. . . . Men shrink from tasting . . . and thirst after water."

Exodus 9:23-24 ". . . the fire ran along upon the ground . . . there was hail, and fire mingled with the hail, very grievous."

Papyrus 2:10 "Forsooth, gates, columns and walls are consumed by fire."

Exodus 9:25 ". . . and the hail smote every herb of the field, and brake every tree of the field."
10:15 ". . . there remained not any green thing in the trees, or in the herbs of the fields, through all the land of Egypt."

Papyrus 4:14 "Trees are destroyed."
6:1 "No fruit nor herbs are found. . . ."
6:3 "Forsooth, grain has perished on every side."

Velikovsky compared the catastrophe described as having occurred at the end of the Middle Kingdom in Egypt with the description of the plague found in Exodus, and this led to his discovery of the distortion of historical perspective or the displacements of history in the ancient world by over 500 years. He concludes that metaphors alone could not account for similarities so strong and so close and suggests that different individuals observed a common or, rather, very uncommon event. To bear further testimony to this thesis, he described not only the bas reliefs on the walls of Karnak but also the state archives consisting of clay tablets with cuneiform signs found at Tell el-Amarna. Here again, similarities in events, names, officials, suggest the improbability that the Biblical of the Tell el-Amarna sources were referring to "happenings" recurring at two intervals separated by 540 years in time. For this to be so would have been a remarkable coincidence—not of history repeating itself, but of virtually being replicated even to the most incredible minutiae.

Having experienced the rigidities of conventional scientific wisdom in respect to our own early medical investigations, we were fascinated to explore the sources of the storm which Velikovsky has raised. We were particularly interested in the methods whereby a physicist and a psychoanalyst could venture into the field of cosmology and geology and, with equal boldness, into a challenge of conventional history. We found that his technique is one which is fundamental to all medicine and biologic investigation—an insistence on an internal consistency of data, a correlation of clues, an imaginative search for causality, then a definitive, if unconventional, diagnosis and a bold prognosis. I like Velikovsky's guts. His postulates reach high; he is audacious, and in his probing he rightly claims "the right to fallibility in details." Above all, I have learned that in research which breaks new ground, he is so right when he says, "at first a new idea is regarded as not true, and later, when accepted, as not being new."

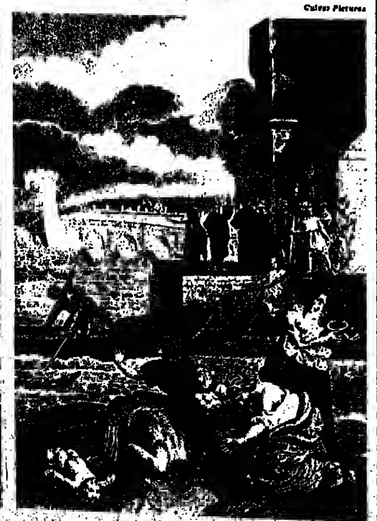
Ancient Major Catastrophes Described by Velikovsky

Velikovsky holds that man was exposed to several major catastrophic events: two series of these took place, one in the 15th century before the present era, or 3,400 years ago; the other of lesser intensity, in the eighth and the beginning of the seventh century, 2,700 years ago. He presented this in his book, *Worlds in Collision*, and summarized:

"The story was told of hurricanes of global magnitude, of forests burning and swept away, of dust, stones, fire, and ashes falling from the sky, of mountains melting like wax, of lava flowing from riven ground, of boiling seas, of bituminous rain, of shaking ground and destroyed cities, of humans seeking refuge in caverns and fissures of the rock in the mountains, of oceans upheaved and falling on the land, of tidal waves moving toward the poles and back, of land becoming sea by submersion and the exposure of sea turning into desert, islands born and others drowned, mountain ridges leveled and others rising, of crowds of rivers seeking new beds, of sources that disappeared and others that became bitter, of great destructions in the animal kingdom, of decimated mankind, of migrations, of heavy clouds of dust covering the face of the earth for decades, of magnetic disturbances, of changed climates, of displaced cardinal points and altered latitudes, of disrupted calendars, and of sundials and water clocks that point to changed length of day, month and year, of a new polar star."

In his "Ages of Chaos," Velikovsky suggests that events in the Scriptures like the plague of the locusts (left) and the plague of blood (right) were reflections of actual events. Both the Bible and the Egyptian Papyrus of Ipuwer suggest that a natural catastrophe did occur at the time of the Exodus, as comparisons between the two (see story above) indicate.

Culver Pictures



European Bronchodilator Is Termed Superior

Medical Tribune Report

ATLANTA, GA.—Meleproterenol sulfote is "far superior" to isoproterenol es e bronchodilator nnd shoulil be approved by the Food and Drug Administration for use in the United States, the American College of Allergists was told here.

"Isoproterenol is e fine dilator, but it is very short eeting," said Dr. Allen Hurst, Assistont Professor of Medicine et the University of Colorado. "Its ection is complete in one end a helf to two hours. Meteproterenol, aveileble in Europe for the pest 12 yeers, leste eboul four hours. It also hes much less side effects then isoproterenol."

He reported that en investigative study of 65 pntients using metoproterenol showed thet results were good both during and between esthmnlic attacks. The ngent can be used in inhalation therapy as well es by mouth.

"It will be a tremendous boon to all of us," Dr. Hurst commented, "if and when this drug is put on the merket in this country."

New Drug, Cromolyn Sodium, Said To Benefit Asthma Patlants

From University of Miami

► A report on another new drug of benefit to esthme patients but not yet generally available, cromolyn sodium, was detailed by Dr. Mayer B. Marks, Clinical Professor of Pediatrics at the University of Miemi (Fle.) School of Medicinc. He said he hed used the drug in ebout 80 children end young edults "with remerkeble results."

Dr. Marks described the egent es "e prophylectic, therepeutic preperation for the prevention of ettecks of bronchiel esthme." He noted thet it is useless in terminating nn alrendy established asthmatic attack.

"Cromolyn sodium has been found most efficacious in many severly uffected esthmatic patients only partinlly controllel by modern allergy therapeutic methnds, including hyposensitlzation, bronchodilator preporelions, und cortlcosteroids," Dr. Marks said. "Many children were relievel of night cough nnd enjoyed undisturbed sleep for the first tinc, to the astonishment of parents and the nursing staff."

Dr. Marks reported lhat the drug was effective in mitigoting asthmatic attack in almost 50 per cent of his patients, and another 25 to 30 per cent "could reduce their total drug inlake and often convert from e daily to an alternate-dny steroid program." He nddel thnt 20 to 25 per ecnt of the patients failed to respond to cromolyn sodium to any noticeable degree.

Cromolyn sodium is inhnled funr times daily by the patient, Dr. Merks snid, nnd it is administerod by usc of a specielly designed turbolnheler into which a cepsulc conteining 50 mg. of the drug is inserted.

Noting thet the drug alreedy has been used extensively around the world, Dr. Merks seld he is hopeful the FDA will approve it soon for use in the United Stntes.

Simple Medical Services Suggested of Pharmacists

Medical Tribune World Service

SYDNEY, AUSTRALIA—The president of the Pharmacy Guild of Australia, Alan Russell, has proposed thet pharmaciste teke some of the work load from physicians by providing some of the more simple medical services.

"A pharmacist has the right to use his knowledge, end he has the knowledge to send patients to the doctor when necessery," he said.

Age a Factor In Operation

BALTIMORE—The patient's age was an important factor in the mortality risk of the Blalock-Taussig operation to correct tricuspid atresia, according to Dr. Helen B. Taussig and colleagues at Johns Hopkins University School of Medicine.

After n study of 56 of Dr. Alfred Blalock's patients, they concluded that "mortality was highest in young infants and decreased sharply after the age of four years." Of 10 who had the operation during their first year, four died. In the 12-to-23-month age group, three of 13 patients died. Three of 10 patients aged three and four years died. But "among the eight patients operated on in the five-to-six-year group, only one patient died."

"The over-all surgical mortality rate was 23.2 per cent," the report said.

The majority of operations were subclavian pulmonary end-to-side anastomosis on the opposite side to the aortic arch.

"Thirteen of the 18 patients who had for 20 years or more had their first operation performed on the opposite side to the aortic arch," the report noted.

The size of the pulmonary orifice and the pulmonary artery made little difference in the mortality.

Dr. Taussig's colleagues in the study, published in the *Johns Hopkins Medical Journal*, were Ritva Kelnonen, Nina Mombergor, and Hermine Kirk.

Protein Lag Misunderstood

GENEVA, SWITZERLAND—Dr. C. Gopalan, director of India's National Institute of Nutrition in Hyderabad, said here that protein concentrates, which are being promoted in many food aid programs, are "unnecessary and uneconomical" for most developing countries.

"Some people concerned with protein-calorie malnutrition give the impression that the problem is a protein gap, that the available diets are deficient in protein," he said. "And on the basis of that thinking it is widely believed that what is wanted is protein-rich concentrates. But this is wrong."

Dr. Gopalan, who was in Geneva to speak at a symposium on food, health, and development at the headquarters of the World Health Organization, said that protein-calorie deficiency arises not because the diet is deficient in protein quality but because food intake is low.

Instead of getting 1,000 to 1,200 calories daily, many Indian children are getting only 800 calories, he said. If they had the 400 calories that comprise the gap, then, with the rice, legumes, and vegetables that make up their normal diet, they would easily get all their protein requirements, Dr. Gopalan said.

The situation may be different in Africa, he observed, because the African diet is based on cassave, which is a poor source of protein. With such a diet, even given a large amount of calories, there is still protein deficiency, he said.

Spared out of his skin.

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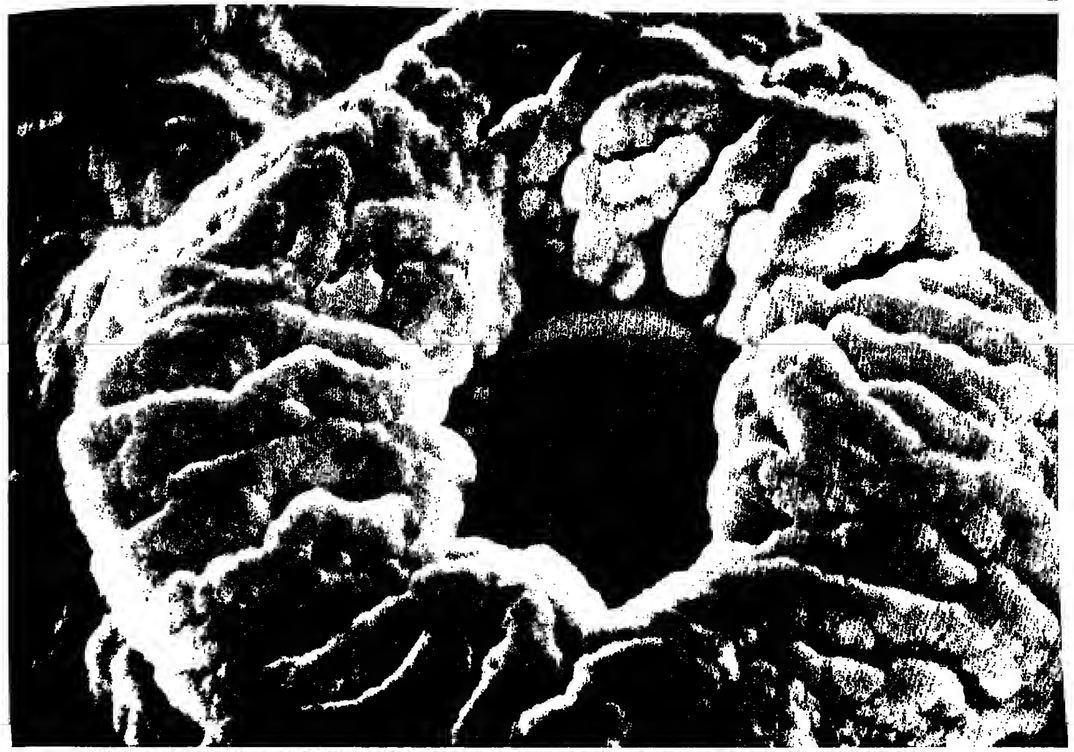


This Scanning Electron Micrograph (7000×) is the first 3-dimensional view of a cell in an ulcerated duodenum. The center is completely denuded, surrounded by fairly well-preserved microvilli. This SEM photomicrograph was taken from a scientific exhibit which won the Hull Award as the "best exhibit on original research or instruction on a medical subject" at the A.M.A. Clinical Convention, November 26-29, 1972, in Cincinnati, Ohio.

Incidence of Herpes VD in Dramatic Increase

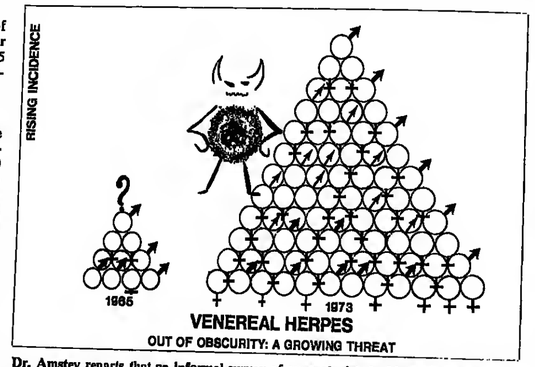
Continued from page 1

He reported that an informal survey of practicing gynecologists in the Rochester area confirmed the fact that prior to 1965 venereal herpes virus infection was virtually never seen.

Other Investigators Concur

"Other investigators also firmly believe that the incidence of the disease has increased dramatically in the last five or 10 years," he added. "In my own private practice, excluding those patients referred because of the infection, gonorrhea and syphilis are less frequent than the herpes virus infections."

The disease can be diagnosed, he noted, either by examining a standard Papsnicolaou-stained preparation or, even more accurately, by inoculating appropriate tissue culture cells with suitable clinical specimens and isolating the virus. The infection, while painful and temporarily disabling, he said, does not lead to the chronic pain, disability, and infertility associated with gonorrhea or the "many fearful manifestations of late syphilis."



Dr. Amstey reports that an informal survey of gynecologists in his area has shown a dramatic increase in venereal herpes simplex (type 2) in the past five or 10 years. In addition, evidence has been mounting that links the herpes virus with more serious disorders, such as cervical cancer and infection of the newborn.

Women's Needs Put Doctors 'at Crossroads'

Continued from page 1

the responsibility to decide on sexual standards for any woman.

"Our ethical responsibility is to teach her to live with who she is, and all of those things she may never be," Dr. Jorgensen said. "Our medical responsibility is to treat her in both illness and health and then follow through by teaching her to live with both."

The Philadelphia gynecologist cited an increase in psychosomatic complaints as one result of women's struggle to adjust to "a rapidly changing era." Noting that perhaps 80 per cent of the complaints heard in routine gynecologic practice have a strong psychosomatic component, she urged colleagues to listen with an "understanding ear" to their patients and to treat the symptoms with sympathy.

Asked About Time Factor

At press conferences, Dr. Jorgensen was asked if it would not be too time-consuming for gynecologists to educate patients as well as to tune in to emotional problems and treat medical conditions.

"This has always been an excuse for weaseling out of responsibility," she replied. "Actually, I don't think it takes as much time to talk to a patient—to tell her what's going on, what is or isn't necessary, and get some feedback—as to hedge and perhaps fabricate.

"We spend a great deal of time when patients come back again and again because they are dissatisfied. Minutes spent in listening, in being honest in a way relevant to their needs, would take less time."

The failure of gynecologists to offer this kind of care has contributed, Dr. Jorgensen said, to the present trend seen in some sections of the country for women to treat each other—to perform menstrual aspiration, do their own Pap smears, and attempt unsupervised home deliveries.

"I cannot condone self-care," Dr. Jorgensen said emphatically. "For example, menstrual aspiration carries the risk of perforation and infection, and I have seen tragedies result from it."

She asserted that women are turning to their peer groups for help because they are more comfortable talking to each other than in trying to obtain answers to their questions and an understanding of their problems from gynecologists.

One major block for physicians has been the feeling that they must somehow change their own moral standards and beliefs if they treat patients with differing standards, Dr. Jorgensen commented.

This is a misapprehension, since women "don't expect their gynecologists to agree with what they may be doing," she said. What women want, she summed up, is someone who will discuss without condemning and who will provide objective information without assuming the right to judge.

Retiring A.M.A. Head Fears Loss in Quality Of Medical Services

Continued from page 1

medical care," said Dr. Hoffman, also "is the primary danger of the Kennedy-Griffiths bill" for a national health insurance system.

"For years we have talked about the specter of socialized medicine," he said. But "we've already lost. . . . We have socialized medicine. The true danger, and the true objective of the Kennedy-Griffiths bill, is nationalized health care—the complete and total takeover of the entire health care delivery system by the Government."

However, he said, the A.M.A. should not "stand opposed to any kind of Government involvement in health care." The organization should, for instance, push for improvement of the Indian Health Service. It also should urge legislation for Government funds to upgrade emergency medical care on nationwide basis—along the lines of a bill that the A.M.A. already is sponsoring.

The quality of medical care is "inseparable from the bond between doctor and patient," Dr. Hoffman said. Therefore, "I am opposed to our profession turning to unionism as the answer to our problems."

A growing interest in unionization among practicing physicians has spawned at least six local organizations across the country in the past year that now are affiliates of the A.F.L.-C.I.O. Twice that many other groups also have formed to pursue collective bargaining by physicians. All told, an estimated 20,000 or more U.S. physicians have signed up in unionlike organizations. The A.M.A. frowns on the trend as "divisive" for organized medicine.

Dr. Hoffman reminded the members that "our sense of unity as a profession derives from serving the public, not from holding it as a hostage. The latter course is an inevitable result of unionism. No matter how noble the intentions at the outset . . . unions possess no other strength."

Research on Stones Set

Medical Tribune World Service

BEIRUT—A team at American University Hospital here has received a grant to investigate the high prevalence of kidney and ureteral stones in Lebanon.

'Helicopter Doctors' Help Save Lives of Road Victims

Medical Tribune World Service

MUNICH, WEST GERMANY—A team of "helicopter doctors" is helping to save the lives of road victims in this area of southern Germany. The physicians, 20 in all, are from the surgical and anesthetic departments of Harlaching Hospital and give services voluntarily.

During duty hours with the helicopter service they are on call at the hospital and can move freely on the hospital grounds as long as radio contact is maintained. The duty turn starts between 6 and 7 A.M., or at sunrise in winter, and ends at sunset.

The doctors form part of a crew that includes a pilot trained in first aid and a rescue nurse.

The helicopters, which are based at a number of hospitals in urban centers, contain all the equipment necessary for treating an accident victim on the spot as well as during flight. The emphasis is on maintaining respiration and circulation. Space is available for the transport of two patients at a time.

The radius of 100 Km. originally set for accident rescue service has proved to be too large. Distances of 50 to 70 Km. from base, however, can be well covered. The average distance in the Munich area is 30 to 35 Km.

The helicopter is [illegible] accident operations headquarters run in conjunction with A.D.A.C., the German automobile club. Ground rescue is called at the same time. On the average, it takes the helicopter two minutes to get into the air and eight minutes to reach the site of the accident. The flight to the nearest hospital also takes an average of eight minutes. Road ambulances, which have to contend with traffic jams, cannot match such speed of operation.

1,800 Flights in 2 Years

Between November 1, 1970, and September 30, 1972, some 1,800 rescue flights were made in Munich. In 80 cases the accident victim was dead on arrival. Emergency treatment was required in 230 cases. No immediate treatment was required in 220 cases.

Not everyone receiving on-the-spot treatment was flown to the nearest hospital. Many acute emergencies, such as shock, were treated on the spot so that an ambulance could provide transportation to hospital.

Experience to date indicates that about 80 to 100 persons are being saved each year who would otherwise have died. Because of prompt treatment, many others have been spared physical disablement and other [illegible]

Manic Depression: Lithium Considered Therapy of Choice

Continued from page 1

does their high-energy state become inappropriate. In its milder forms, he noted, mania may be one of the positive driving forces in creative and productive persons, and therefore, he warned, lithium should be used judiciously by experienced physicians.

Lithium carbonate, said Dr. Fieve, "really can be called the first prophylactic agent available in psychiatry," because it not only calms the manic state but also prevents future recurrence of both manic and depressive.

He deplored the fact that, despite this, only a small fraction of patients suffering from manic depression are being treated with the agent.

"Of the at least 6,000,000 individuals affected in the United States," said Dr. Fieve, "only 50,000 are at present receiving lithium."

He urged that a wide educational campaign be waged to bring lithium to the attention of the medical profession and the general public.

Correct Diagnosis Important

Pointing to the necessity of correctly diagnosing manic depression, he said that a study has shown that over 30 per cent of "schizophrenics" in New York State mental hospitals were found to be depressed or manic-depressive. Because of mislabeling, he said, these patients have undergone countless sessions of psychotherapy, as well as treatment with electroshock and multiple tranquilizers and antidepressants.

Recounting his experience during 20 years as a manic-depressive, Mr. Logan said that the onset of his depression was insidious. "I know I felt bad, but I didn't imagine I was sick." He had to force himself to work, and he was not satisfied with the results.

When mania set in, Mr. Logan said, "I was fairly flamboyant in my thoughts, imagination, and speech. . . . I put out a thousand ideas a minute things to do, plays to write, plots to write stories about."

Could Have Committed Crime

This manic state, he recounted, finally went over the bounds of reality. "I don't mean that I committed any crimes, but I could easily have if anyone crossed me." He was persuaded by a physician to enter a hospital. On admission, when he discovered that his door was locked, he leaped out on the window ledge and threatened to climb down the outside wall unless the door was unlocked. "That's manic elation for you!" he said.

The only treatment he received in the hospital was rest and "pleasant physical exercise."

For many years thereafter, he continued, he received no definite treatment. He then entered a manic period again—during which he accomplished his most successful plays. Thirteen years after his first hospitalization, he became ill again and received electroshock therapy.

At about that time he read about lithium and went to Dr. Fieve for treatment. "It made me feel infinitely better about my life and gave me renewed hope for my future.

"I'm not conscious of the slightest of highs or lows, and yet I seem to be just as productive as I've ever been."

"I believe," Mr. Logan stated, "that manic depression is terrifying, and elation, its nonidentical sister, is even more terrifying—attractive as she may be for a moment. But as she goes higher, man is even more dangerous than when in the depths of the depression. But I'm sure that the thing that is almost as much of a menace today is the stupid, almost dogged, ignorance of these illnesses, the vast lack of knowledge that they are able to be treated, and the seeming ease of the

The Mail

• "The National Heart and Lung Institute is seeking institutions to study *populations* rather than *copulations* of lung cells as described in the contract offering discussed in the *OFHR Newsletter* of January 19," says the *OFHR* (Office of Federal Health Relations) *Newsletter* for February 2, sent us by Dr. Alan T. Webb of Downey, Calif.

It says that on page 1, that is. On page 3 it says that February 26 is a deadline for offering contracts "to develop primary and continuous cultures of homogeneous copulations of lung cells."

Someone somewhere is blocked, and interestingly.

• Dr. Carlos R. Baezn of Odenton, Md., was taken by n sentence, in a publication of whose title we're not sure, that said: "Contemporary radiators are frequently white and hence radiate negligibly, warming s room by conviction." He thinks hypnotists might be interested.

• "Insects fatally affected by the garlic compound include certain mosquitoes, the potato tuber, the red palm weevil and the common house fly," reports *Mechanix Illustrated*, causing Dr. B. A. Michaelis of Fredericktown, Mo., to express concern about the effect of this news on people who have thought themselves vegetarians.

• The mother paper (and heaven help us): Dr. Michaelis, as well as Drs. Hernadine Z. Paulshock of Wilmington, Del., and Meyer I. Krischer of Norfulk, Va., all called attention to a sentence that unaccountably ran: "The syndrome [prunebelly], first described in 1895, consists of deficient abdominal maseulature, cryptorchidism. . . ." Unaccountable, unaccountable, unaccountable.

• Classic A. M. Lotz of Olympia, Wash., sent us a copy of the *Seattle Post-Intelligencer* that said: "The typo of operation you are talking about is known as a suprapubic prostatectomy."

• Dangiers: "Inne Lanenster, Ph.D., formerly with the University of California at Berkeley, is the mother of two boys and a primatologist," said *Today's Health*. ("Bet that last one was tough to deliver," commented Dr. Edgar End of Milwaukee in the course of sending the quotation in.) And Dr. Gordon M. Meade of Rochester, N.Y., found the following in his city's *Democrat and Chronicle*: "The more apathetic of the drug users may not have responded to the initial questionnaire, he points out, and the sample was probably loaded with chronic users of superior intellect."

• Dr. David Patron of Lakewood, Colo., received, from one of his local hospitals, a memo entitled "Texts Added to the Medical Library." Item 59, we're frightened to report, reads: "*Parsons and Ulfelder*—Atlas of pelvic operations (replacement)."

• Ectopic Beat, reporting that a Caribbean tour advertised that it included a luau and a barbeque, asked, "What's a barbeque?"

"Chinese haircut, of course," answered Dr. Julian A. Waller of Burlington, Vt.

• "More literal than figurative," writes Dr. Lester J. Candela of Great Neck, N.Y., of a headline in the *Long Island Press* that read: "A Widow Often Inherits Grave Financial Straits."

• Dr. E. H. Heinrichs of Watertown, S.D., found the following in a program of an American Academy of Pediatrics Continuing Education Course:

"The 'First World Hot Air Balloon Championship' will be held in Albuquerque beginning February 10, 1973. Over 100 participants are expected. This function is not directly connected with the Course."

He wonders what the indirect connec-

Jumper's Knee Can Be Treated Under Only Local Anesthesia

Medical Tribune Report

LAS VEGAS, NEV.—"Jumper's knee," a partial rupture followed by degenerative changes of the deeper fibers of the patellar tendon adjacent to the patella, can be treated successfully by excision of the affected area under local anesthesia, it was reported here by two investigators from Duke University Medical Center.

The entity, which is not easily recognized, has been given its name because jumping activity seems to precipitate the pain in the majority of athletes with this problem, Drs. Frank H. Bassett III and Panayiotis Soucacos told the annual meeting of the newly formed American Orthopaedic Society for Sports Medicine.

The 12 patients in their series, all college or professional athletes, "complained of only one thing—pain, well localized to the region of the inferior pole of the patella and commonly reproducible by practicing or competing in their particular athletic event." The pain was further characterized by insidious onset; none of the patients could remember a specific traumatic event.

It was found that pain was elicited by the act of deceleration rather than acceleration. The patients who were basketball players, for example, had pain when they came down with the rebound or tried to stop suddenly on defense.

On examination of the affected knee, tenderness was always easily elicited with the patient's knee in full extension. With the knee flexed, the tenderness was difficult to elicit. The remainder of the examination was negative.

The treatment of choice is rest. the investigators said. Rigid immobilization was found to be of no greater benefit than rest alone, and steroid injections were not of lasting value. Even with periods of rest up to six months, symptoms may recur when athletic activity is resumed.

Because most athletes are not willing to stop competing, "surgery is the only therapy we have found that provides permanent and lasting benefit," the physicians said.

Operation Considered Minor

They described the operation as minor, and explained that local anesthesia is used because the affected area is small and circumscribed and identification of the pathology is difficult unless the patient can guide the surgeon to the area of tenderness.

The procedure was described as follows: Each layer of tissue is anesthetized in succession until the patellar tendon is exposed. On the surface it appears normal, but by palpation the source of pain can be identified. With additional anesthesia at that point, the superficial fibers are spread longitudinally and the area of pathology can then be found deep within the tendon. The lesion is excised until normal-appearing fibers are seen circumferentially, and the defect is closed by longitudinal apposition of the tendon fiber, usually requiring one or two interrupted sutures.

Here, a player places stress on his knee as he comes to a sudden stop. The position is likely to cause the injury "jumper's knee" that is associated with deceleration.

The patient is allowed to bear weight the following morning with a light compression dressing about the knee. Knee motion is encouraged as soon as pain can be tolerated. Athletic activity is withheld for six weeks.

The 12 patients were followed from one to 12 years. Two had complete relief of symptoms, one had partial relief, and one (the earliest in the series) achieved no relief.

One of the 10 with complete relief was a tennis player, another was a field-goal kicker, and the rest played basketball.

Scale Relates Life Crises to Illness Onset

Medical Tribune Report

NEW YORK—A scale that helps predict stress-related illness, based on 43 events in life that require change in the individual's adjustment, has been devised at the University of Washington School of Medicine, Seattle.

Heading the list of these events in death of a spouse, with divorce, marital separation, a jail term, and death of a close family member also appearing high on the scale (see accompanying table). Marriage, retirement, and sex difficulties outrank such financial trouble as foreclosure of a mortgage, which is only one point below trouble with in-laws. Changes in sleeping habits, a vacation, and Christmas all rank above minor violations of the law.

Studies by Dr. Thomas H. Holmes and Minoru Masuda, Ph.D., both Professors of Psychiatry, indicate that "the concept of life change appears to have relevance to the causation of disease, time of onset of disease, and severity of disease," Dr. Holmes told a conference on "Stressful Life Events: Their Nature and Effects" at the Graduate Center of the City University of New York.

Beginning in 1949, more than 5,000 patients were studied to determine the quality and quantity of life events that were clustered at the time of disease onset, he said. On the basis of these observations, a Social Readjustment Rating Scale (SRRS) was developed.

For all the life events listed, said Dr. Holmes, "the emphasis is on change from the existing steady state, and not on psychological meaning, emotion, or social desirability."

Marriage Was Rated 500

In rating the life events, marriage was given an arbitrary value of 500. Each of 394 subjects was instructed to indicate a numerical value for each of the remaining 42 life events. If an event was more intense and protracted than marriage, a proportionately larger number than 500 was to be chosen. If less and shorter readjustment was required, a proportionately smaller number was assigned.

The SRRS represents the mean score, divided by 10, of each item for the entire sample and arranged in order of rank. Stress change values of life events are measured in "life change units" (LCU).

A study of 88 subjects who listed all major health changes by year of occurrence in the previous 10 years.

Eighty-nine of the major health changes reported, or 93 per cent, were associated with a clustering of life changes whose values totaled 150 LCU. The health change itself was not included as one of the life changes in the total for the year.

A direct relationship was observed between the magnitude of the life crisis and the risk of health change, Dr. Holmes said. Of the subjects with life crises between 150 and 199 LCU, 37 per cent had an associated health change. This association rose to 51 per cent for crises subjects with scores between 200 and 299 LCU, and to 79 per cent with scores of 300 LCU or more.

Further studies, he added, "suggest that the greater the life change or adaptive requirement, the greater the vulnerability or lowering of resistance to disease, and the more serious the disease that does develop."

Life Events That Appear to Affect Health Are Ranked

RANK	LIFE EVENT	MEAN VALUE	RANK	LIFE EVENT	MEAN VALUE
1	Death of spouse	100	23	Son or daughter leaving home	29
2	Divorce	73	24	Trouble with in-laws	29
3	Marital separation	65	25	Outstanding personal achievement	28
4	Jail term	63	26	Wife begins or stops work	26
5	Death of close family member	63	27	Begin or end school	26
6	Personal injury or illness	53	28	Change in living conditions	25
7	Marriage	50	29	Revision of personal habits	24
8	Fired at work	47	30	Trouble with boss	23
9	Marital reconciliation	45	31	Change in work hours or conditions	20
10	Retirement	45	32	Change in residence	20
11	Change in health of family member	44	33	Change in schools	20
12	Pregnancy	40	34	Change in recreation	19
13	Sex difficulties	39	35	Change in church activities	19
14	Gain of new family member	39	36	Change in social activities	18
15	Business readjustment	38	37	Mortgage or loan less than $10,000	17
16	Change in financial state	38	38	Change in sleeping habits	16
17	Death of close friend	37	39	Change in number of family get-togethers	15
18	Change to different line of work	38	40	Change in eating habits	15
19	Change in number of arguments with spouse	35	41	Vacation	13
20	Mortgage over $10,000	31	42	Christmas	12
21	Foreclosure of mortgage or loan	30	43	Minor violations of the law	11